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CONTENTS

		Page
Who are the Backward Classes ? — <i>Nirmal Kumar Bose</i>	89
A General Census Report on the Barpali Area — <i>Nityananda Patnaik</i>	99
Lodha Marriage Custom — <i>P. K. Bhowmick</i>	105
Problems and Methods of Social Anthropology in India — <i>Jyotirmoyee Sarma</i>	112
Lower Palaeolithic Culture-complex and Chronology in India — <i>Dharani Sen</i>	121
Reproductive Life of Pahira Women — <i>Ajit Kishore Ray</i>	147
Miscellaneous Notes	161
Book Reviews	164

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MAN IN INDIA

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WHO ARE THE BACKWARD CLASSES ?

By NIRMAL KUMAR BOSE

Introduction

THE Government of India have set up a body entitled The Backward Classes Commission, whose duty it is to :

(a) Determine the criteria to be adopted in considering whether any sections of the people in the territory of India should be treated as socially and educationally backward classes ; and in accordance with such criteria, prepare a list of such classes setting out also their approximate numbers and their territorial distribution.

(b) Investigate the conditions of all such socially and educationally backward classes and the difficulties under which they labour.

And make recommendations—

(i) As to the steps that should be taken by the Union or any State so as to remove such difficulties or to improve their condition, and

(ii) As to the grants that should be made for the purpose, by the Union or any State and the conditions subject to which such grants should be made.

The appointment of the Commission itself has been made because of the "nation's solemn determination to eradicate once for all the age-old evil of social discrimination and a

sense of high and low, which is the direct negation of democracy".

The Commission have already circulated a questionnaire from their office at 2 Man Singh Road, New Delhi-2, and have, at the same time, been touring the different states of the Republic in order to gather evidence from official and non-official sources and from interested individuals, and it is hoped that a valuable report will be published with regard to the actual social conditions prevailing among the backward classes now existing in various portions of our country.

We are all aware of the fact that Indian society is a stratified society in which the lines of separation between one stratum and another are more violently marked than in any other country in the world. There are stratifications in all other parts of the world. Some are based on colour or social custom, on differences of wealth or political power, and so on. Indian society also shows these characteristics ; only, in our case, the stratification is so much more rigid and so elaborately defined that it gives our social pattern a distinctive character of its own. In Europe, an individual can pass from one stratum to another, even though he has to encounter a greater or less degree of resistance. There was more carefully defined social difference in Europe in former times, but money has acted as a leveller. The productive organization which was built up in Europe after the Middle Ages, and particularly during the last few centuries, has been responsible for a reduction of the rigours of the stratification which existed previously in the West. The movement of population which has taken place as a result of historical and economic changes has also made it possible for the stratification to be of a comparatively informal and impermanent nature. In India, on the other hand, the influence of modern economy has not yet been sufficient to obliterate the stratifications of the past. Caste was class difference to a certain extent ; but the growth of class differences in modern times on the basis of wealth has not succeeded in obliterating the earlier pattern of class difference based on caste to the fullest extent. It is therefore the desire and will of the Indian nation to do

away with the hierarchy of caste and of its consequent social discrimination, and prepare the ground for full social equality.

One may naturally raise the question here as to what should be considered to be the criterion of complete social equality. Personally, we believe, George Bernard Shaw was right when he said that complete inter-marriageability is the test of social equality. That should be the goal which we should try to reach eventually. But, in the meanwhile, we have to devise ways and means whereby those who have been "neglected" so long (the Commission have used the Hindi term *uppekshit* in this connection), and who were described as the "suppressed" instead of the "depressed" by Swami Vivekananda, can quickly raise their heads and march shoulder to shoulder with the rest of the Indian population.

"The Government of India, as we have noted above, are prepared to spend money in order to bring about the necessary transformation. But the way has to be pointed out clearly so that the needed change may come about within the shortest time possible, and with the least expenditure of energy. It is also desirable that the benefit should flow more to those who stand in greater need of it.

The appointment of the Commission itself, and the Government's express desire that special funds should be allocated for purposes of uplift is indicative of the view that the "backward classes" cannot come to their own with their unaided strength, and that the nation is determined to extend to them the necessary aid.

It is under these circumstances that we should proceed with the preliminary task of defining the criteria of backwardness within our own society.

Proportional Representation in the Services

One of the questions appearing in the questionnaire is, whether the proportional representation of various castes in the services should not be taken as a test of backwardness or otherwise. It is the belief of the Commission that when these figures are available in the states, they will serve to indicate who are more and who are less heavily represented in propor-

tion to their population, that being a satisfactory index of the "advanced" or "backward" character of a particular community.

But we have to confess that this particular test does not appear to be satisfactory at all, either from the sociological or the political point of view. We might even venture to say that the application of this test is fraught with the possibility of serious damage to the body politic itself. Let us explain how.

In a country where education and wealth did not find natural outlets in trade and industry, as was the case when India lay suppressed under the heel of British economic interests, it might have been natural for some people to flock to the services whenever an opportunity presented itself. The services were then generally crowded by people who belonged to the upper strata of the caste system. But there were others again who flocked to trade and to various other occupations, and who could not be considered to be "backward" on that account. If therefore the test of proportional representation in the services is taken to be the test of advancement or backwardness, it is likely to lead to a wrong picture of the actual situation.

(i) The Marwari traders of Bengal, or the Gandhavaniks and Suvarnavaniks are, we believe, poorly represented in the services, and so are the Mahishyas or the Paundra-kshatriyas, who are predominantly agricultural in their occupation. But that does not, or should not, lead us to treat the above two groups on a par with one another in so far as "economic or social backwardness" is concerned.

(ii) If representation in the services is employed as the test of backwardness in the Commission's sense, then a few years hence, the same test is likely to be re-employed in order to find out how far the backward community has become advanced in comparison with others. There will be a scramble in the meanwhile for proportionately greater representation in the services on a communal basis; and this in itself will be an undesirable and harmful tendency.

Such a demand, which is essentially that of a growing but predominantly professional middle class, has led in the past to the creation of a separate state out of what was India;

although the ostensible reason was cultural or religious difference. A similar desire for more governmental patronage has been responsible to quite a considerable extent in accentuating the growth of provincialism in India today. And we are not sure that such considerations in the services have not already brought about a lowering of the standards of efficiency to some extent.

It is unfortunate that the Indian National Congress, in one its reports, considered itself helpless in checking discriminatory treatment in the provinces, even when that brought about a lowering of efficiency. The Congress also felt that the demand for more representation in the services lay at the root of much of the desire for the creation of separate provinces. In a report entitled *Bengali-Bihari Question*, placed before and accepted by the Working Committee in its sitting of January 11-14, 1939, we find the following observation :

" Provincial Governments are now with the advent of popular influences forced to recognise the claims of hitherto unrepresented or inadequately represented communities in the services, and there is a tendency to tighten the rules excluding non-provincials. If all the provinces could be induced to keep the doors open for and if all appointments could be filled up only by the persons best qualified to fill them irrespective of their religion and place of birth there would be no difficulty and unfairness, however much and however bitter the grievances on the part of the provincials of a province or the members of a community might be for their practical exclusion on account of their backwardness. *However much one may wish it, there is no possibility for that being accepted today by all provinces and all communities.**

" It is not possible also to ignore the fact that the demand for creation of separate provinces based largely on a desire to secure larger share in public services and other facilities offered by a popular national administration is becoming more and more insistent, and hitherto backward communities and groups are coming up in education and demanding their fair share in them. *It is neither possible nor wise to ignore these*

* Italics present author's.

demands* and it must be recognised that in regard to services and like matters the people of a province have a certain claim which cannot be overlooked" (pp. 20-21).

This was in 1939. And now in 1954, in the free India of today, we are faced by a similar growth of the provincial spirit to a possibly much more dangerous extent. This serves to sidetrack the vision of the people of India from the "Purna Swaraj" envisaged by Mahatma Gandhi, who defined that goal as being equivalent to the "full economic freedom of the toiling millions". It even led the Father of the Nation to ask in sorrow, "Some Assamese thought that Assam belonged exclusively to the Assamese. If that spirit fired every province, to whom could India belong?" (*Harijan*, 7-9-1947, p. 311).

There is another consideration which should make us hesitate to employ a form of communal representation as the test of advancement or backwardness. In case, this is found acceptable, and the Government consequently begin to encourage "progress" by dispensing more consideration in regard to services to the "backward" communities, it may lead to dangerous developments in our political life. When a political party, no matter whether it is the Indian National Congress or or any other, wishes to prove its concern for the backward classes by the distribution of favours in the manner outlined above, then we are placing a rather dangerous precedent in the hands of a political party, instead of trying to create a kind of national service which should be above party considerations. It would be far wiser to avoid such a possibility even if it were merely for the sake of the preservation of the purity of democracy.

But what then should take the place of this suggested test?

Personally, we are of opinion that the proportional representation of castes in the list of those (i) who pay Income Tax and (ii) Union Board rates in the villages is a better, and more harmless, index of the economic position of any caste or community. If this is joined with (iii) the proportional representation among all those who attend school, we believe the backwardness in both the economic and educational

* Italics present author's.

spheres can be made out with sufficient accuracy for purposes set forth by the Commission.

A practical difficulty may arise in regard to the criteria suggested above. The necessary figures may perhaps not be available. But if sample surveys, even on a limited scale, are made with regard to castes in the rural areas, and the Income Tax and Union Board lists and school registers are subjected to the necessary examination by the State Governments, we ought to be able to find out the proportional representation of castes in these lists with a fair amount of accuracy.

Different castes will have varying degrees of representation in these lists in proportion to their actual population in an area. It is for the Commission to decide as to what should be the figure below which a caste or a tribe shall be considered "backward"; once, of course, the Commission decide to accept the above criteria in regard to educational or economic backwardness.

Social Backwardness

We have so far not dealt with backwardness in regard to social status. In India, statuses are finely graded into high and low, and membership in a caste is almost wholly determined by the accident of birth.

It is one of the prominent features of Hindu society that the closer one approximates in regard to the socio-religious observances of the Brahmins, the higher is the position occupied by that particular community in the social scale. Brahmins observe certain taboos in regard to food, dress and occupations. The more distant a caste is in these matters from the Brahmins, the lower is the position which it occupies in the scale of castes.

It has been suggested by some social reformers that all Shudras should be considered to be backward. Unfortunately, as Shudras form more than three-fourths of the population of Hindu India, the existing resources of the Government would prove completely inadequate for the upliftment of the vast mass of this population. Among the Shudras, again, some are considered high and some low. Food of certain

types, and not rice, is accepted by Brahmins from some and not from others. Lower down, the Brahmin in Bengal accepts drinking water from some and not from others. Others again are considered to be so low that even their touch (or sight and shadow, as in some parts of South India) defiles. If we are to make a practical proposal, it would be perhaps better to limit the socially backward to those whose water is not found acceptable by Brahmin priests. That would naturally include the "untouchables" also.

In one of the Census Reports of India a detailed examination was made of the hierarchy of castes; it was found that "low castes", besides being marked off by the rules outlined above, had also no Brahmin priests, barbers or washermen to serve them. Or, those priests, barbers or washermen who served "high castes" did not serve some of the "lower" ones. Some of the latter again had gods and goddesses of their own, and these gods and goddesses were not looked upon as belonging to the Brahminical pantheon. Some ate beef or other prohibited food; observed the custom of widow remarriage, and so on; or pursued occupations taboo to high castes in Hindu society. Without going into the niceties of such distinctions, it would serve our purpose sufficiently if we limit social backwardness to those whose water is not found acceptable to Brahmins.

A different suggestion has also been made from responsible quarters. It has been suggested that all those whose *traditional* caste occupation is some kind of manual labour, should be considered as "backward" in the sense of the Commission's enquiry. This also seems to lead us to large and unmanageable proportions of the population. Many of the cultivating castes (not those who do so by choice but whose hereditary occupation is agriculture) belong to sections from whom Brahmins can and do accept drinking water. From one point of view, of course, all labourers can be looked upon as backward in comparison with people who pursue white-collar jobs. But it would, we think, not be quite proper to lump them up with others who occupy a

lower position in the social hierarchy. Moreover, agricultural communities, when prosperous, are sometimes comparatively better off than many of their lowlier brethren. If the Government began dispensing patronages, there is great likelihood that many of the advantages would not reach down to the bottom, but would be swallowed up by those who are in comparatively lesser need of it.

Our final suggestion is, therefore, that castes whose water is not acceptable to Brahmins, and who are *at the same time* very poorly represented in school registers or in Income Tax and Union Board lists in proportion to their population, should be considered "backward" in the sense of the Commission's enquiry. The figure or percentage below which a community should be considered backward, should be suggested by the Commission after conducting a few sample investigations in the different states of India.

Remedy

Those who are backward, should be given preferential treatment in regard to educational facilities, both literary and technical. In regard to loans or in the matter of the formation of co-operatives of various kinds, let them enjoy special privileges from the Government. This discrimination should however never be carried to recruitment in the services. Of course, in the matter of application for services, there is no harm if one belonging to the scheduled groups enjoys partial remission in the matter of fees. But when it comes to qualification for a particular post, our object should be not to remain satisfied with the minimum requirements, but to make use of the maximum qualifications from among those who apply for a particular office. We cannot afford to sacrifice the efficiency of the services at the altar of communal parity.

What then should we do ?

As we have already said, the backward classes of today must be given preferential treatment in regard to educational or economic facilities, with the proviso that these do not go against the long-range general interests of the nation. It is a difficult task ; but we are sure that those who are in charge of

the administration today will be able to keep their vision clear, and not allow sentimentality, or political expediency, to drag them into steps which, though apparently just, will serve to weaken the very foundations of our nationhood.

One word more. We believe that the role of non-official endeavour is very great in regard to the question of social uplift. Mahatma Gandhi saw clearly that some occupations like scavenging, leather-working etc. were looked upon as unclean by people occupying high rungs in the social ladder. And those who pursued these "lowly" occupations by caste, were assigned a low place in society. It was clear to Gandhiji that any occupation which was necessary for the life of the community must be looked upon as equal to another, no matter whether one involved uncleanness or not. And the rule of heredity in regard to the choice of occupations had also to be done away with altogether. Therefore, he enlisted volunteers from among high castes, employed them in the so-called "low" jobs, and thus virtually created a revolution in Hindu society. In other words, Gandhiji tried to raise the status of all work needful for the life of the community in such a manner that they were to enjoy equal status in society. According to him, moreover, no man who was not a manual labourer had a place in the free India of his dreams. Anybody who lived on the toils of others had no place in his ideal society. Bread labour was the first moral law of existence.

It is our firm belief that although a great deal can and should be done through official agencies, through a necessary change in laws, yet this will of the nation to do away with injustices has to be more actively expressed by men and women of determination streaming out, and using non-official agencies, in order to *educate* the citizens of India by means of precept and example that men are, after all, equal, if all of them convert themselves into socially useful labourers. And when the equality of various forms of labour is established, when men and women can marry without artificial distinctions coming in the way, then backwardness will become a thing of the past, and the ground prepared for the flowering of the human personality under conditions of social and economic equality.

A GENERAL CENSUS REPORT ON THE BARPALI AREA

By NITYANANDA PATNAIK

Rural Life Analyst, Barpali

Introduction

A general demographic and sociological census was carried out in the Project villages. In this survey important information was collected on the topics listed below :

- A. Family structure.
- B. Caste composition.
- C. Caste occupation and distribution of different occupations among different castes.
- D. Housing conditions.
- E. Institutions in the villages.
- F. Enumeration of population according to different age-groups.
- G. Migration of population.
- H. Enumeration of carts, cattle etc.

This report, however, mainly describes the family structure in relationship to housing conditions ; castes with regard to different occupations ; analysis of population according to age-grade, and migration of population. Subsequent reports will analyse the remaining data acquired by the census.

Caste and Occupation

Almost all the castes have become multi-occupational. People of all castes have taken to cultivation as either their primary or subsidiary source of livelihood. The actual cultivating castes such as Kulta, Pandra, Dumal, etc., have also taken up occupations other than their caste occupation. There

are certain jobs such as pottery, confectionery, oil making, brass work, barbering, shoe making, weaving, washing clothes, sweeping village streets and cleaning public and private latrines which are only carried out by the following castes respectively, Kumbhar, Gudia, Teli, Kansari, Bhandari, Chamar, Bhulia or Kusta, or Kuli or Ganda, Dhoba and Ghasi. The above castes have taken up other jobs such as cultivation, tailoring, wage earning, betel shop, and other kinds of business which are not their caste occupation, but there is no reciprocity in this matter to the extent of the cultivating castes and other castes of business adopting the set of occupations which the above practise.

Many people who do not belong to fishing castes such as Keut, Tiar or Gingra catch fish from all the water sources and also sell them in the market, but they are marked off from fishing castes in so far as interdining and intermarriage are concerned.

The occupations such as betel selling, cycle fitting, photography, tailoring, selling glass bangles etc., are not traditional caste occupations. It is only a few years back since these lines of earning were opened as a result of roads joining different places and modern vehicles facilitating migration of population from one place to another. As these occupations are not caste occupations anybody who wishes and is in need of employment can accept these jobs as a source of his living. The set of occupations which were introduced after the opening up of the roads is only found in the village of Barpali, not in the other 16 villages under reference, because Barpali is situated by the side of a big road which connects Sambalpur with Bolangir. In Barpali the people are more business-minded. It is evident from the occupational distribution table that most of the people are engaged in some sort of business, such as betel shop, cycle fitting, tailoring, photography, cloth shop, ornament shop, miscellaneous stores, yarn and colour shop, hotel and saloon, medical store and contracting in public works such as canal digging, house and road building etc. There is a small percentage of people who are engaged in service, either governmental, local or private. The services

under the above-noted agencies include agricultural farm, animal husbandry, postal, revenue, watchman in inspection bungalow, court of wards, *gram panchayat*, rice depot, cloth store and other artisan's jobs. The businessmen who devote most of their time to their profession have no time to take care of their landed property. In their profession they need also hands to assist them. Therefore, for all these purposes there are a few people of Pap and Barei castes who are not found in the other 16 villages. The castes which are not found in other villages but only in Barpali are Barei, Chamar, Chhipi, Dhibar, Gudia, Gingra, Hatua, Kusta, Kansari, Khetriya, Karan, Bengali Kayastha, Muslim, Mangan, Niari, Pap, Sindhi, and Christian.

Amongst them Chamar, Gudia, Kusta and Pap are statistically significant. They live in this village because of its nearness to the main road which enables them to trade in their products and to obtain the necessary raw materials from distant places. For the Gudias it is a good village for selling confectionery. They could live in no other village, because other villages are too small and are inhabited mostly by poor or middle class cultivators who just live from hand to mouth.

(See Tables I & II)

Migration of Population

As this village is situated near the main highway, there is no difficulty in regard to movement of population to and from this village. Forty-two families and fifteen individuals have migrated into this village. Some of them have settled here and other have not. The temporarily settled ones are in jobs such as Barpali village service, Canal Department and Police, jobs which are temporary and transferable in nature. The other group of immigrants now own immovable property and have therefore become settled.

There are also thirty-two families who have emigrated from this village to different places outside this area for the purpose of service and business. Most of them are temporary emi-

grants. They come back to this village on festive occasions and at times when they are required at home. The migration of population to and from Barpali plays an important part in bringing about a change in the social attitude of the people. The village is influenced a great deal by the outside civilization and the people tend to be less conservative in certain aspects of their culture. For example, it was found that, compared with other villages, there is a great amount of success in spreading the self-serving latrines in this village. There also seems to be a possibility of introducing other factors of improved life conditions more easily here than in any other village. This village has comparatively more literate people than any neighbouring village, because there is a high school and schools of lower standard for boys and girls. The literacy and the alliance of people with the outside world are the two most important factors which cause people to be more receptive to improved ideas.

Population Analysis according to Age-Grade

The population of all the villages analysed was divided into four age-grades, namely, 0—6, 7—15, 16—50, 51—more.

From the analysis of age-grades in Barpali it is found that in the age-grade 0—6, the number of women on the whole is greater than that of men. But in eight cases, among the Chamar, Brahmin, Bhandari, Kansari, Mali, Chhipi, Karan and Marwadi the case is otherwise. In the age-group of 7—15, the male number exceeds the female number except among the Ganda caste where it remains the same as in the previous age-grade. In the case of age-grade 16—50, males are more numerous than females except among the Pap, Gond, Teli, Kumbhar, Rajput, Sud, Ghasi, Haldia Teli, Karan and Marwadi, where the females are greater in number. In the last age-grade, 51 and above, the females are in 23 cases found greater in number than the males. But in the remaining 24 cases it is the reverse.

It is difficult to interpret these facts at this stage. But the paucity of female population is perhaps one of the causes

of child marriage and venereal diseases. A similar age-grade survey was carried out in a group of 16 villages. The results of the analysis of these data corroborate exactly the findings in the village of Barpali.

(See Tables III & IV)

House Census

A survey regarding the housing situation in each family living in 16 villages was carried out along with the general census survey. Table V gives a statistical picture of the housing situation.

The following analysis gives an idea of the housing situation by showing different percentages of families possessing a different number of rooms.

<i>Families in %</i>	<i>Number of Rooms</i>
2·07	Homeless
22·77	1
34·23	2
25·06	3
10·17	4
3·16	5
1·08	6
0·76	7
0·45	8
0·1	9
0·1	10
0·05	15

From the table it is evident that 22·77%, 34·23%, and 25·06% of the families are occupying homes with one, two, three rooms respectively, whereas the rest have rooms ranging from four to

fifteen in number. Besides, there are 2·07% of families who are homeless.

The families found in these 16 villages consist of members ranging from one to twenty in number. Greatest in number statistically are those families which consist of three members. On the whole, it is evident from a numerical comparison of members of families that the housing condition is not satisfactory, comparing the number of members with the rooms occupied by them.

Dated February 28, 1954
American Friends Service
Committee, Barpali Project,
Sambalpur, Orissa.

TABLE I
Distribution of Occupations among different Castes living in 16 villages.

Castes.	Popu- lation.	Ear- ners.	Busi- ness.	Ser- vice.	Wage- earner.	Weav- ing.	Culti- vation.	Beg- ging.	Reli- gious.	Bar- ber.	Confec- tion.	Oil- pressing.	Fish- ing.	Pot- ter.	Carp- enter.	Wash- ing.	Collect- ing.	Veg. growing.	Mat- making.	Cattle- tending.	
Rhandari	63	37					30			7											
Brahmin	283	93	3					69		21								2			3
Binjhal	254	108	1	5	41				56									1			
Bhulia	150	97				3	80		13												
Bania	53	20	3							17											
Baisnab	38	23						20		3								6	2		4
Dumal	165	120		1	34			73									31	14		1	
Dhoba	219	136	3	2	34				51												
Ganda	1153	677	3	19	177	233	183				1							46			15
Ghasia	47	31	3	7	7	3	5											6			
Gour	1851	1035	2	8	229		590									7	26			173	
Gond	324	151		5	40			90										3	2	11	
Haldia Teli	6	2						2													
Keut	452	256	2		34		140				27		36	3			6			8	
Kumbhar	96	90		1	2		45						35				5			2	
Kuda	8	5				2		3													
Khadra	134	56	44		1			10	1								2			3	
Kulta	663	409	2	2	3		397														
Khajuria	8	2						2													
Kuli	444	309				3	299	7												2	
Kandh	45	25		1	7		15														
Khandayat	1	1		1													2				
Luhura	31	19	6				11													2	
Laban	64	48	44	1				1										93		7	
Mali	369	245	1		2		142														
Marwadi	19	7	7														8				
Pandra	346	170	1		17		138										3			6	
Pujari	15	13						8	2												
Rajput	7	2		2																	
Sundhi	11	7	1		5		1														
Suda	59	23			16		4													3	
Sahana	644	343	35	1	40		246									1	11			8	
Tiar	41	26	1				19			2		4									
Teli	214	142	5	1	3		112				1	14					5			1	
Thanapali	102	75	2		2															2	

TABLE II

Distribution of Occupations among the People of Barpali village alone

Table No. II (Contd.)

Caste.	Ear- ners.	Busi- ness.	Ser- vice.	Weav- ing.	Culti- vator.	Wage- earner.	Beg- ging.	Reli- gious.	Shoe- making.	Bar- ber.	But- cher.	Oil- making.	Fish- ing.	Confec- tion.	Wash- ing.	Dri- ver.	Car- pentry.	Pot- ter.	Politi- cian.
Kuli	42	7		33															
Kandh		1						1											
Kansari	45	45																	
Kshatriya	9		1		6													2	
Karana	10	2	6															1	
Kayastha	4		4																1
Kustha	112	9		103															
Mali	10					10													
Marwadi	7	7																	
Muslim	13	4	4				3	2											
Mangan	1		1																
Niary	3		3																
Pandra	2							2											
Pap	60	4				1	55												
Rajput	12	3	1					2		6									
Sundhi	6	2	1					3											
Suda	10	2	1			2	5												
Sahara	29	7	1				21												
Sindhi	3	1	2																
Tiar	4														4				
Tanla	7	2					5												
Teli	36	4	1			8								23					
Thanapati	9		1					8											
Udia	43	18	4		20											1			

TABLE III

Population according to Age-grade in 16 villages.

Name of village.	Age-group.	0-6		7-15		16-50		51+	
		Male	Female	Male	Female	Male	Female	Male	Female
Rabanguda		54	43	44	44	127	133	17	15
Pateipali		33	23	46	34	88	75	15	19
Bandu Munda		28	26	66	46	139	133	17	22
Khairpali		25	28	35	20	68	75	12	13
Sujia		36	35	47	45	132	124	23	33
Kadli Munda		35	42	31	45	88	85	13	20
Tentelpali		47	41	74	47	173	164	17	25
Katurpali		39	40	46	43	169	154	6	18
Tulandi		94	94	109	90	395	361	42	51
Tejang		29	46	42	42	107	119	24	21
Baheapadar		25	29	28	27	83	80	17	24
Kainsir		81	124	92	96	304	311	77	66
Kusapuri		87	76	113	96	261	258	38	57
Amamunda		43	40	41	37	95	94	16	24
Barlabahal		21	28	37	32	99	100	14	21
Dalaipali		7	13	14	11	50	42	3	6
TOTAL—		684	728	865	755	2378	2308	351	435

TABLE IV

Statement showing the Families, Population according to Age-grade in Barpali

Ser. No.	Caste.	Total No. Families.	Total No. Population.	0-6		7-15		16-50		51+	
				Male	Female	Male	Female	Male	Female	Male	Female
1	Bhulia	155	742	75	82	60	47	192	179	47	60
2	Kusta	112	434	35	36	43	31	113	94	30	52
3	Ganda	85	352	24	29	34	35	102	95	17	16
4	Kuli	42	172	16	16	18	9	44	36	15	18
5	Chamar	52	254	41	24	30	17	55	52	17	18
6	Sunari	67	246	23	29	20	17	61	58	9	29
7	Brahmin	101	401	47	29	39	36	109	92	16	33
8	Pap	60	156	9	10	4	1	44	45	12	31
9	Gond	79	248	21	25	24	11	63	65	10	29
10	Sahara	29	79	2	8	5	5	24	19	5	11
11	Bhandari	15	67	5	2	4	3	15	15	10	13
12	Kansari	45	252	43	27	24	13	62	55	11	17
13	Teli	36	130	8	12	35	10	4	11	32	18
14	Kulta	10	28	3	3	14	—	4	1	1	2
15	Udia	43	177	11	19	43	6	20	15	47	16
16	Gudia	21	123	11	16	30	8	13	12	23	10
17	Kumbhar	11	56	2	2	14	2	4	5	17	10
18	Muslim	13	35	2	3	12	1	4	1	7	5
19	Mali	10	42	4	1	10	4	4	4	12	3
20	Kalanja	45	180	12	16	57	6	13	12	52	12
21	Hatua	15	65	8	8	9	9	3	2	23	3
22	Binjhal	16	44	2	4	7	5	5	2	10	9
23	Barei	11	41	3	4	11	3	2	2	12	4
24	Rajput	12	46	4	4	11	3	2	3	14	5

Table No IV (Contd.)

Ser. No.	Caste.	Total No. Families.	Total No. Population.	0-6		7-15		16-50		51+	
				Male	Female	Male	Female	Male	Female	Male	Female
25	Kshatriya	9	37	5	5	12	—	2	2	7	4
26	Sundhi	6	15	—	1	6	—	1	1	3	3
27	Sud	10	38	2	6	7	2	1	8	7	5
28	Taria	7	11	1	—	4	—	1	—	4	1
29	Thhanapati	9	25	—	1	11	—	1	1	8	3
30	Ghasi	27	115	10	14	17	7	25	27	7	8
31	Christian	8	11	1	1	3	1	1	—	3	1
32	Haldia Teli	4	35	4	5	6	1	5	6	6	1
33	Kandha	1	2	—	—	—	—	—	—	2	—
34	Mangan	1	1	—	—	—	—	—	—	—	1
35	Dumal	1	4	—	—	1	1	—	—	1	1
36	Baishnab	4	17	2	2	4	2	1	—	2	4
37	Chhipi	3	25	3	1	6	—	5	2	6	2
38	Tiar	4	18	3	1	6	—	—	1	6	1
39	Mahanti	10	32	4	2	11	5	2	6	2	—
40	Kayastha	4	6	—	1	2	—	—	—	3	—
41	Niari	3	10	1	2	2	2	—	—	2	1
42	Marwadi	7	36	5	2	10	2	2	3	7	5
43	Pandara	2	14	—	3	3	—	2	1	2	3
44	Gingra	2	6	1	1	3	—	—	—	1	—
45	Dhobar	13	58	6	8	15	1	5	3	19	1
46	Sindhi	3	12	—	1	2	—	4	2	3	—
47	Jharna Brahmin	5	24	1	5	6	—	3	3	5	1
48	Dhoba	16	63	3	5	17	3	7	5	16	7
TOTAL—		1269	4985	463	476	712	309	1037	946	565	477

TABLE V

House Census in 16 villages

LODHA MARRIAGE CUSTOM

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Introduction

THE Lodhas were considered to be a criminal tribe in West Bengal before the revocation of the Criminal Tribes Act. They are mainly concentrated in the jungle tracts of western Midnapur. Agriculture is not practised by them and excepting the collection and sale of jungle produce they have little other means of livelihood. Their notoreity for criminal practices makes it very difficult for them to get any other employment. They live a life of constant poverty and insecurity. But they are reported to have seen better days in the past when jungles were abundant and they could make free use of them.

During the work among the Lodhas of Jhargram in Midnapur, the writer studied several marriage cases. They are found to practise mainly two forms of marriages, namely,

(i) The regular form of *Bibaha*.

(ii) Widow remarriage or *Sanga*, including levirate. Of these the regular form of marriage is considered to be more respectable. In this paper, we have tried to describe a regular marriage ceremony in detail.

Sororate is said to be permissible, though we have not come across any case so far. Cousin-marriage has not been found upto now. But it was said by some Lodhas during interview that such marriages do not lead to a breach of taboo.

The tribe is divided into several exogamous clans (*gotra*). There are also sub-clans. Members of the same clan cannot intermarry, but two cases were found by the writer where the members of the same clan had entered into marriage. This, however, was not a socially sanctioned custom and the parties concerned had to pay a fine to the caste community.

The Preliminaries

Here, this particular case deals with the marriage of a Lodha named Sashi, of Tetala, P. S. Jambuni, Jhargram. Sashi is now 28 years of age. His clan is "Bara Bhugta". His wife's name is Champa. Her father's clan is Mallik. She is about 24 years. Sashi's father Kanto is 50 years old. He has another son named Banka. Sashi is the eldest. When Sashi wanted to marry, he requested his father and other relatives to seek a suitable bride. After a few days effort, Sashi's mother's brother succeeded in arranging a marriage. Kanto's younger brother Dula (42 years) went to Chandrapur, Jhargram, where the bride's family lived.

As soon as Dula and Sashi's mother's brother reached the bride's place, they were given a hearty reception. They reached there in the afternoon. A palm-leaf mat was spread on the ground for the guests. Water was supplied by the female members to wash their feet. Several elderly men of the bride's village assembled there. There was discussion about Sashi and his family. At the end of the discussion the bridegroom's party decided to pay ten rupees as the bride price. Before their departure a feast was given, *hanria* or rice-beer was also served as drink. The party now invited the bride's father to come to Sashi's place in return and then left for their own village before sunset.

After a few days the bride's father and two other relatives came to Kanto's house. A return feast was given to them. After another few days, Dula with the bridegroom's mother's brother went to the bride's place and paid ten rupees as the bride price. This sum was received by the bride's mother. She produced one brass plate and Dula placed the money on it. Dula took his meal there and came back.

The day of wedding was fixed by the family members. No Acharya Brahmin (astrologer) was consulted in this case. The date was fixed on one Tuesday in the month of Phalgun (Feb.—March). It was reported by some of the informants that Tuesday is the most appropriate day for marriage. The birthday is avoided both in the case of the bride and the groom. If the

birthday happens to be Tuesday, the next alternative is Friday. Besides Phalgun (Feb.—March), Baisakh (April—May) and Jaistha (May—June) are also considered propitious for the wedding ceremony.

The formal intimation of the scheduled date and time or *lagan* for the marriage was conveyed to the bride's house on the fifth day preceding marriage. On that particular date Sashi's father's sister went to the bride's house with the following articles :—(i) an earthen pot or *garu* (new), (ii) five pieces of turmeric, (iii) five spoonfuls of mustard oil, (iv) one new red thread for the waist called *chabaki* or *ghunshi*, (v) one *mala* or wooden bead necklace. All these things were carried in the new earthen pot. Dula also accompanied her. When they reached the bride's house, the bride's mother came out to receive them. She held a brass plate in her hand, containing several unhusked grains of rice and *durba* grass (*Cynodon dactylon*). She sprinkled all these things upon the earthen pot brought from Sashi's house. This ceremony is called *chumai* (kissing or the welcoming ceremony). Later on, the bride's mother took the pot and placed it inside the house. The party was given a feast without meat. After the feast they returned home.

The Ceremony of Marriage

Sashi's father's sister returned to the bridegroom's house and the arrangement for anointment with turmeric paste (*ga-halud*) was made. Turmeric paste was applied at first to the forehead of the bridegroom by his father's brother's wife. Gradually the whole body was anointed. Then the bridegroom was made to take a bath. The same operation was repeated for five successive days in the evening at both the bride and bridegroom's house. During this period Sashi was very careful to avoid any danger, for instance, he avoided going to the jungle.

On the day of marriage a temporary shed called *maroa* or *chhamra* was erected in the courtyard of the bride's house. Four posts of *sal* (*Shorea robusta*) were erected and these were covered by means of *sal* or *mahua* (*Bassia latifolia*) branches. Palm-leaf

mats were spread on the ground beneath the canopy. A similar shed was erected in the courtyard of the bridegroom's house. One small earthen altar or platform called *bedi* was also constructed from the earth dug up from near the root of the *Sidha* tree (?). The earth had been dug up by means of a hoe. The Sambar (bridegroom's sister's husband) gave three strokes in the ground for this purpose. On the altar two newly purchased earthen pitchers filled with water were placed with two mango twigs in its mouth. The pitchers were placed on the earthen platform just on the eve of the wedding procession. Vermilion marks were applied to the pitchers.

Sashi took his meal cooked in a newly purchased earthen pot. The meal was rice and gruel boiled with *gur* or coarse sugar. No salt was mixed with it. The bride also took a similar meal in her parents' house.

The wedding party consisted of (i) Sashi (bridegroom); (ii) Sashi's father's mother (Rukha); (iii) *Sambar*—Sashi's sister's husband; (iv) Sashi's father's brother (Dula); (v) Sashi's mother's brother; (vi) there were three other persons from the village of Sashi.

The following articles were taken by the party to the bride's place. These were kept in a newly purchased basket which was carried by Sashi's father's mother.

(i) *Sala dhuti*—a piece of cloth for the bride's brother (9 cubits long).

(ii) *Ma sari*—one piece of cloth for the bride's mother (10 cubits long).

(iii) *Mama dhuti*—a piece of cloth for the bride's mother's brother (9 cubits long).

(iv) *Kane sari*—a piece of cloth for the bride (10 cubits long).

(v) Cash money for (a) barber, (b) washerman, (c) foster-mother, (d) village maidens or bride's sister, (e) *Deheri* or village priest.

Sashi first dressed his hair and anointed it with plenty of hair oil. He put on a new piece of cloth, a shirt and a turban called *palla* on his head. One mango leaf was tied by means of a thread on the right wrist of Sashi. This was

done by the Sambar. The bridegroom also wore a wooden bead necklace and a *ghunsi* or red thread round his waist.

The sister's husband of the bridegroom who was in the party performed the part of a leader in the marriage ceremony. He is known as the Sambar. In many cases he is assisted by the Deheri or village priest. In this particular marriage the Sambar was presented a new piece of cloth by Sashi, the bridegroom.

The wedding party started at noon. They also took one kerosene lantern with them. The party including the bridegroom walked on foot.

The Reception

The villagers including some relatives of the bride were on the look-out for the bridegroom's party. When they came in sight, several elderly members of the bride's village advanced to receive them. When the party arrived at the bride's house, water was brought for washing their feet, after which mats were offered for their seat. This is known as *kuli mather*. Then the bridegroom's father's mother who was in the party, was requested to go inside the hut with her basket. The bride was presented with the new *sari*. The other pieces of cloths were presented to the relatives for whom they had been brought. Then the bride was taken to the shed by her father's sister.

The Sambar now asked the bridegroom to sit on the mat facing east. The bride was seated in front of the bridegroom. Two persons held a piece of cloth between the bride and the bridegroom according to the direction of the Sambar. The Sambar tied the turban of the bridegroom with the corner of the *sari* of the bride. The village priest was present there. They prayed to God for the happiness and prosperity of the couple. The screen was removed and the bride was then made to sit on the left side of the groom by the Sambar.

Inside the hut there was a palm-leaf mat spread on the floor. The couple were now taken inside by two young men. They sat on the mat facing east. A quantity of rice and gruel boiled with coarse sugar was served to the bridegroom in a

brass plate. After the bridegroom had eaten the food, the bride was served a fresh quantity of the same food on the same plate without cleaning. During the night the couple were to remain in this hut, they were not allowed to go outside.

That night a feast was given to the bridegroom's party and some notable persons in the village belonging to the same community.

On the next morning, the bride and bridegroom saluted the elderly persons of the village and also the relatives and started for their home. A cart was arranged for this purpose. The couple including the groom's party were seated in it. When the cart reached the bridegroom's house, the newly married pair were received by the bridegroom's mother who directed them to sit under the shed on a mat. Sashi's mother gave the couple a little quantity of coarse sugar in a brass cup and water to drink.

The married couple were now taken within the house. As they tried to walk in, several maidens, including bridegroom's sister, stood at the door and wanted some payment before they could allow the married pair entry into the house. The Sambar, i.e., the bridegroom's sister's husband, paid the girls one rupee, when the way was opened. This ceremony is known as *batghera* or blocking the road. The married pair were now seated on the mat inside the room. The Sambar now placed an iron bangle (*kharu*) in Sashi's hand. This had been previously purchased in the market. The bride and the bridegroom were taken to the altar. The bridegroom stood on the other side of the altar. According to the direction of the Sambar, the bridegroom applied vermilion, which was in the hand of the Sambar, to the iron bangle. Then the bridegroom applied vermilion by means of the bangle on the forehead and hair-parting of the bride. He then handed over the iron bangle to the bride. The latter also touched the forehead of the bridegroom with the vermilion on the bangle. This was repeated three times and at last the bridegroom slipped the iron bangle on the left wrist of the bride. This ceremony is known as *kharu parano*, wearing the bangle.

The Sambar now took a hoe and dug a pit on the eastern

side of the altar. This pit is called *pukur* or tank. The bride was taken to the left side of the bridegroom. The Sambar poured water kept in the earthen pot placed previously on the altar over the couple. After that he undid the knot between the *sari* of the bride and the turban of the bridegroom. Then he removed the mango leaf tied to the wrist of the bridegroom. This mango leaf and the thread were kept in a newly purchased basket. The couple were supplied with oil for besmearing their bodies and taken to a tank for bath. The Sambar threw the basket into the water of the tank and the couple as well as the Sambar took their bath.

A feast was given to the relatives and the villagers. After the feast was over the bride and bridegroom took their seat on a mat and villagers and relatives came and made presents to them in cash according to their capacity. Sashi received twelve rupees on the occasion. This is known as *bandhapan*.

The bride stayed eight days in her husband's house. She was not allowed to do any hard work during these days. On the eighth day her brother came to take her back for a few days. This is called *atmangala*, i.e., the auspicious eighth day.

Thus the marriage ceremony was over.

PROBLEMS AND METHODS OF SOCIAL ANTHROPOLOGY IN INDIA

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DETAILED descriptions of different cultures and reconstruction of cultural histories do not hold the entire attention of the anthropologists of today. The gradual disappearance and merging of indigenous preliterate societies into the pales of civilization, and the increasing demand for utilitarian values of science have tended to make anthropologists select other types of problems for study. There are today broadly three different schools or methods of studying man's culture: (a) Ethnography. It seeks to study a given culture or society and to report the facts. The ethnographer studies the particular culture as a unique entity. (b) Ethnology. Its procedures are to learn the geographic and sequential order of culture traits. It involves the comparison of culture traits of one society with those of another. (c) Social Anthropology. It aims at studying the general properties of society.

The social anthropologist studies the elements of culture in their total relationship to each other, and is not interested in culture traits taken out of their original context. He defines a problem of research and then acquires his facts, and hopes to make general statements on social behaviour from the particular facts. The method of social anthropology is comparative. Thus a social fact such as "caste", which has been held by many to be peculiar to India, would be studied by social anthropologists not as a peculiarity but as one of a "kind" of similar systems of stratification existing elsewhere in the world and operating in the same general way. It is expected, therefore, that social anthropologists should have the knowledge of several societies and be able to classify the data they gather.

Two types of questions have been raised in social anthropology. One is to seek the inter-relation of various social institutions which help to maintain the integrity of the social structure. This is the general problem of Radcliffe-Brown and his students. The other is to see how far the social institutions satisfy individual needs and requirements, as viewed by the students of Malinowsky.

In its interest in the general properties of social behaviour the field of social anthropology merges into that of sociology. The latter has had a different academic beginning in having its roots in the theories of social philosophers who aspired to find laws in society resembling the laws of nature, developing later in the thoughts of social reformers, then culminating in social research on the problems of urban life. Sociology had its beginnings in the studies of literate European societies. It focussed its attention on heterogeneous differentiated communities whereas anthropologists dealt mainly with homogeneous folk societies. As both fields have expanded, however, they have joined hands, and come to look upon the small folk societies as laboratories of human group life where many of the social processes and problems of adjustment can most clearly be studied.

In India the difference between sociology and social anthropology has hardly had a chance to arise. This is fortunate in that there has not been any quibbling over who is trespassing on the other's field. But at the same time there has not developed in this country the breadth of vision and a grasp of the significant problems of research which could have grown from a simultaneous study of contrasting societies.

Much of what goes on in the name of social anthropology in India is still the collection of curious facts and the construction of cultural histories. It is a pity that even nationalistic feelings are sometimes raised in the course of anthropological research in this country. Moreover, some anthropologists look upon the indigenous tribal cultures with escapist values. The wish to save such cultures from the influence of civilization, and their preservation in cultural pockets as living museums has been sponsored by some. It cannot be

denied that in their association with primitive groups many anthropologists enjoy a vicarious satisfaction of freedom from the restraints of civilization. For these persons the charms of anthropology would disappear if our aboriginal groups made a satisfactory adjustment to civilization and merged in our midst.

Indian society provides situations for cultural infusions and absorptions. The caste system operates in such a manner as to bring within its fold groups of tribal origin. This infiltration of tribes into the caste society can be seen from the earliest historical times, and it has attracted the attention of many scholars. This is indeed a crucial problem for research. The actual mechanism of the change from tribe to caste should be thoroughly investigated. We are still rather vague about the process through which tribal people become accepted as members of caste societies, and how they slowly move up in status. Moreover, the personality problems that arise from consequent changes of status also provide topics for research.

Next, the stratified societies themselves and the problems arising therein are as yet relatively unexplored. In India these are commonly known as caste societies. They comprise people of our own culture, and vary from the integrated village communities to the heterogeneous urban populations. The rural communities provide the foundation of the complex and literate Indian cultures of the present day. Such major institutions as caste, joint household, and economic serfdom work here is an almost uninterrupted manner. There have been many studies on caste, its nature and possible origins, the divisions and subdivisions within each caste, and the peculiarities of occupation and custom have been noted and described in great detail. But we need to know yet the processes of inter-relation between castes, and how caste influences and is influenced by the other institutions of the community. Moreover, the other bases of stratification besides caste need to be studied, especially the economic bases. The broad cleavages between groups of castes and the relationship of these cleavages should be examined. The relation of the economic structure and the social groups should be studied.

The influence of status upon personality provides also many problems for research. Whether there are any fundamental differences in the personality and temperaments of the higher castes and lower castes need to be looked into. Patterns of family life can also be studied in simple detail in the villages, and the relation between the members and the conflicts that arise can be most easily observed.

In studying urban areas the fundamental pattern of the integrated social life as existing in the rural regions of the same provincial area need to be understood. Urban areas are not cultural areas, but they are natural areas. Groups of people are clustered together in impersonal communities. Urban areas bring together multiple culture groups, and there may be accommodation between these groups without any cultural interchange. Their reasons for living near each other are economic and ecological. Neighbourliness does arise from proximity but the cohesion of village life can hardly arise. In cities the stratification of population takes place on new lines. How the traditional caste stratification is adjusted to city life, and how the caste rituals are performed in changed surroundings are problems of importance. Social symptoms other than caste which are considered important for stratification by the people themselves need to be learned and analysed. Urban communities provide situations for contradictory statuses and many maladjustments can be traced to status conflicts. Moreover, the city brings together people of many languages, many religions and nationalities. The adjustments they make in their own lives and to one another are significant problems for research. Studies of vice and crime offer another field in urban sociology, as well as the problems of the different occupational groups, and the effects of industrialization upon society. Problems of family disorganization, race relations, industrial relations, and vice and crime have been the standard subjects for western sociologists ; and whether we call ourselves sociologists or social anthropologists, these are also significant problems for social research in India.

Social anthropologists have to face the dilemma of whether

or not they are behaving as real scientists. Many of us are used to thinking of science in terms of the natural sciences, and in social research we often wish for similar precision and accuracy. The different qualities of the subject matter, however, should be borne in mind. For in social research we are dealing with human beings, and besides being observed and categorized, they need to be understood. In order to understand we need to identify ourselves with the people we are studying, and imaginatively share their lives. This process of understanding has been termed "sympathetic introspection" by Charles H. Cooley and other American social scientists. But this identification with our subjects has its dangers, for at the same time, we have to be objective and critical. This produces our dilemma. For the amount of bias, or "personal equation", that creeps into our findings cannot be checked as easily as in the natural sciences.

The techniques of collecting data will naturally have to be suited to the problems. Members of a small tribal community may be approached and thoroughly investigated by a single person. Again the tribal community in its integrated form is a homogeneous group, and therefore the "case study" method, as often used, is more appropriate than the quantitative method. In an integrated culture a few cases illustrate the entire cultural group. In studies of culture contact and cultural maladjustment, as individualities are more prominent, and as variant types of personalities and problems emerge, quantitative studies become necessary. The method of studying preliterate societies has been that of staying in the community for some length of time, and collection of data from observation and interviews. The investigator is usually a non-participant observer, and the fact of his being a "stranger" helps in the objectivity of his views. Some amount of adjustment to the culture pleases the group and produces rapport, but attempts to "go native" do not have any scientific value. A knowledge of the tribal language is necessary. Glimpses of tribal life through the medium of "the interpreter" as advised and practised by some present-day anthropologists in this country, because of the reason that many of the European surveyors had

collected data in such manner, hardly indicate an advancement in our science. No fixed time period can be suggested for the investigator to stay in the community. He must have sufficient time to investigate all the problems that have been raised initial to his research. Repeated visits are often beneficial in retaining scientific objectivity.

While investigating problems in village caste communities, some variation in the methods is needed. As the majority of us are members of caste groups, the conscious awareness of our own position and the recognition of it by others may make it difficult to gain complete access into the sympathies of all groups. It would be desirable to have a team of investigators each working among different caste groups and discussing their findings at suitable moments. Or the number of investigators should be decided upon by the number of factions in the village, or the cohesions of several groups. It would be ideal if each of the castes or other groups in an area could be studied by investigators of the same group identity. That would help to find out the inner tensions and the minute relations within the group and towards others. But the possibility of this is remote. At present the identification of the investigators as strangers removes from them many of the prevalent caste taboos, and makes it possible for each to gain access to each of the sharp cleavages in the community. Moreover, due to the sharp seclusion of women in such communities the need for woman investigators is very great in approaching the women members.

It is desirable that the investigator has no language problem in studying caste communities. If he is of the same language group, or can speak and understand it thoroughly, it saves difficulties and misunderstandings. He may find situations suitable to make participant observation. However, the more he has possibilities to study as a member of the group, the greater are his chances of losing objectivity. Frequent associations with his own friends and family, discussions with other scientific people, and absences from the community may become necessary, and are recommended for the maintenance of his scientific view-points. Quantitative data by means of

schedules and questionnaires may be gathered in selected problems, but here also the "case-study" method will be found to be valuable. In small village communities individual persons or households do exemplify much of the culture pattern. Here also the variant cases arouse interesting problems for investigation. The interview technique may be used to greater advantage among people of the same language and culture group, for here it is easier for the investigator to understand the interviewee, as more of his feelings and emotions on a given subject may be grasped from the manner of speaking.

In conducting research in urban centres the student may be first struck by the fact of not finding any "group". Here he may lead investigation in areas which hold heterogeneous populations, and therefore the method of living within the group may not be possible. Data may have to be gathered from individual persons or families, and cliques or associations if they are found. Techniques of non-participant and participant observation may be used on selected problems, but direct fact-finding devices that can lead to quantification take on added importance. In literate communities the schedules and questionnaires on given subjects themselves save time and assure anonymity when necessary. Along with these, interviews either by previous appointment or at random, depending on the problem, provide the basic understanding. In urban communities time is more important than in rural areas, and this must always be borne in mind in preparing the schedules and questionnaires, and in conducting the interview. Here one must be careful not only in not tiring out the informant but also in not taking up too much of his valuable time. Moreover, in urban areas the investigator must have his problem clearly defined and limited in scope, for here due to many heterogeneous influences he is more apt to lose control of the situation than in rural areas.

In all three types of communities here mentioned maps and census provide basic material. In tribal settlements the making of maps, as well as the taking of census, provide easy opportunities to go anywhere and to meet everybody. Maps should be made not only of geographical locations, but all the houses,

the meeting places, and important institutions in the community should be shown spatially. Such maps reveal social and cultural distinctions in all kinds of communities. In caste communities, proximity of houses of different castes may determine more of their social relations than caste feelings, and these show up well on maps. In cities maps can be made to show the different elements of the heterogeneous population, the distribution of selected social problems, and the ecological growth of the city. The Indian census at ten year intervals provides vital source data on population, literacy and economic standards, and it should be used as a primary source-book.

The student must also have a historical knowledge of any type of community or institution that he is studying. In preliterate societies, as well as in many of the village communities, historical tales may have to be gathered from folk sayings, and these may vary from true history. But it is important to know what the people themselves offer as their history. The verbal histories need also be taken in communities which have written historical documents, for in nowise will the latter cover all the topics the student will be interested in knowing.

An elementary statement may be here made and with emphasis. The student, after the selection of his research problem, must explore all the written sources and acquaint himself with all the published data relevant to his topic. He should study the documents carefully and critically, but not with scorn. For we may find things new which were not found by those who worked before us ; and that is how all sciences are built up.

Some references have been made to personality maladjustments in situations of culture contact and status conflict. It is now held by many that not only the culture itself but the individual personality in the cultural setting demands equal attention. This approach is rather new and special field methods which can be applied universally are yet lacking. Many techniques for such studies have been developed in the West, and among these the Rohrschach and the Thematic Aperception Tests have been made popular in India. Adapted

to the culture, and used with insight, these may give us some significant understandings, although the value of the interpretation of these tests is still a matter for discussion. More schemes for personality studies suited to the Indian cultural settings need to be developed.

The utilitarian values of social anthropology may now be taken up. If the public is to support the expansion of social research, they will naturally want to ask, "What good does it do?" We should be aware of the extent that the public may benefit from this science.

Social anthropologists are not social reformers. It is not for them to find out the "good" or the "bad" elements of society, nor can they answer as to whether it is "right" or "wrong" for any given institution to exist in a society. Questions of good and bad, or right and wrong, do not lie within the field of science. Moreover, as the subject-matter of social anthropologists consists of human societies, they cannot experiment and find new elements for human use in the manner of the natural scientists.

Human societies are studied, however, with the expectation of finding general patterns in trends and events whereby the occurrence of similar facts in similar situations may be predicted. In the ability to predict lies the element of control. The more the science is developed, the greater will be the refinement in predictability.

The advice of anthropologists is already sought by the Government in the administration of the tribal population in India. Anthropologists can serve other functions also. In the U. S., besides advising the adjustment of tribal people, sociologists advise the treatment of criminals and guide their readjustment to normal life, guide the processes of americanization of foreign nationalities, seek to find situations where race prejudice may be diminished, and expect to predict the success or failure of marriages, thereby aiming at building up the bases of sound family life. These are only a few social situations which the American sociologists expect to control. Anthropologists can expect to put themselves into similar use in this country by studying crucial social problems of the day.

Social anthropologists can use their ability to predict, particularly with reference to the effects of legal enactments. They can thereby guide the making of laws concerning social problems. When the significance of their science has been well established in this country it may be expected that their opinions will always be sought by the law-makers whenever they try to change the course of society through written laws.

LOWER PALAEOLITHIC CULTURE-COMPLEX AND CHRONOLOGY IN INDIA*

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MAN as an artificer emerged in the beginning of the Pleistocene epoch during the first glacial phase of the Ice Age, according to one estimate, about 550,000 to 600,000 years ago. So far comparatively few human fossils have been found but cultural remains of Man are considerable. Java, China, Palestine and Uzbekistan have produced fossil remains of Early Man in Asia. In India, while human fossils are yet undiscovered, evidence of human occupation extending over several millennia has been found in a large number of palaeolithic stations in various parts of India. § So far the earliest artifactual evidence of Man in India comes from the Boulder Conglomerate stage of the Upper Siwaliks in N. W. India and perhaps from corresponding basal gravel stages in peninsular India and elsewhere during the second Himalayan glaciation which, if dated with the Mindel of Europe, would be about 475-435,000 years before the present¹. It is however likely that Man was present in India in an earlier phase.

The archaeological history of Man is broadly divided into three main ages—the Stone Age, which was of immense duration and the relatively short Bronze and Iron Ages, which followed successively. The Stone Age is further subdivided into three main periods—the Palaeolithic, the Mesolithic and the Neolithic. The Palaeolithic period coincides with the Pleistocene or the Ice Age and the Mesolithic and the Neolithic periods with the geological Holocene. The main archaeological sequence from Stone to Steel broadly reveals the

*Presidential Address, Section of Anthropology & Archaeology, Forty-First Indian Science Congress, Hyderabad-Deccan, 1954.

§ Unless otherwise stated, India and Pakistan are comprised together for the sake of clarity in discussion.

chronological order in which types of human culture or society historically emerged⁹. The Palaeolithic period alone accounts for more than five thousand centuries of human culture. The Palaeolithic broadly represents the earliest human stage or stages of hunting, fishing and food-gathering economy, ethnographically characterized as a period or stage of *savagery*. The Neolithic represents the succeeding stage or stages of food-producing economy, ethnographically described as a stage of *barbarism*.

One of the main aims of prehistoric archaeology is dating. Professor Gordon Childe⁸ aptly remarks that "archaeology cannot supplement history or become prehistory unless its material is arranged in the true historical order and temporal sequence". The prime task of the archaeologist is to establish a chronological classification of cultural relics. The relics must be grouped in logical complexes and assigned to their appropriate cultural or industrial or technical groups. Within the Palaeolithic, several cultures or industries are represented, which, when arranged in a chronological order, reveal stages of technological evolution. Based mainly on geology, climatology and palaeontology, a system of relative chronology of the Pleistocene has been evolved. The Pleistocene epoch is characterized by a cyclic rhythm of climatic changes and the results of such climatic changes determine the smaller subdivisions of the epoch. The Pleistocene Ice Age in India with its four main glaciations and three main interglacial phases provides a suitable basis for dating the human cultures in glacial and periglacial regions. The corresponding climatic cycle of increased precipitation and relative aridity provides the necessary chronology for the culture cycle in non-glaciated regions. The problem of Pleistocene chronology in India is discussed in a later section.

Within this chronological framework of the Pleistocene, the Palaeolithic or the Old Stone Age is divided into an Upper and a Lower Palaeolithic period, of unequal durations and of sharply contrasted cultures. There is however, no universal hard and fast line of demarcation. In Europe, the Upper Palaeolithic, which is dated within the end-phase of the last

glaciation towards the close of the Upper Pleistocene, is characterized by a more advanced stone-tool technology (blade industries) and a new technology based on bone and antler. The Lower Palaeolithic, on the other hand, as archaeology has revealed, is characterized by a lithic culture-complex comprising pebble, core and flake tool-industries. Paterson proposes to label all those industries of the Pleistocene not comprised within the culture group association of those predominantly *blade* industries which are found towards the end of the Upper Pleistocene as Lower Palaeolithic⁴.

A tool is not merely a human handicraft. It is a material expression of a technological tradition within a socio-economic structure which is adapted to an environment, organic as well as inorganic. In prehistoric archaeology, culture has a restricted meaning, defined by observable archaeological traits. It is mainly a material culture that archaeological relics reveal. Qua archaeologist, Professor Gordon Childe defines *culture* as a recurrent assemblage of material traits². Such traits must occur in logical complexes. In the Lower Palaeolithic archaeology, the traits are essentially technological and typological. The Lower Palaeolithic archaeological records have revealed distinct assemblages of stone artefacts showing several characteristic techniques of manufacture and processing. Artefacts occurring in close association and related by one or more techniques constitute an industry. The *totality* of related industries having both spatial and chronological distribution constitutes culture. Occurrence of a series of industries, exhibiting similar or related techniques of preparation, and spreading over large areas for a period of time, constitutes what Paterson⁴ calls a *tradition*, which is thus a complex of technical groupings. In Europe, in the Lower Palaeolithic, the Abbevillian-Acheulian (or simply Acheulian), the Clactonian or the Levalloisian constitute *traditions* in this technical sense. The first is essentially a core-biface tradition, while the second and the third are essentially flake traditions with a complete absence of the biface. It is however recognized that the biface cultures have their flake-tools as well, produced mostly by a simple technique akin to the Clactonian⁵. Such flake types are com-

prised within the same tradition (Acheulian). In western Europe in several places the two main lithic traditions generally run parallel, while in others, there is contact and addition or assimilation of techniques resulting in mixed or hybrid industries. The *parallel phyla* concept is however questioned⁶ in connection with the Lower Palaeolithic development in Africa and peninsular India, where vertical subdivisions between the two main techniques cannot be recognized. The African hand-axe culture reveals the core and flake techniques in internal associations.

In the Lower Palaeolithic industries of India, several techniques and tool-complexes are observed and a number of traditions are recognizable, but their spatial and vertical distributions are imperfectly known, due chiefly to lack of regional surveys and difficulties involved in climatic and geological correlation. Broadly three lithic traditions or complexes are recognizable : (i) a biface core-tool tradition broadly similar in form and technique to the Abbevillian-Acheulian of Europe and Africa ; (ii) a pebble-tool tradition, broadly similar in form and technique to the Kafuan-Oldowan of Africa and (iii) a flake tradition coupled with pebble-tools, broadly similar to the Anyathian of Burma and Choukoutien of China. Its flake techniques recall the Clacto-Levalloisian of Europe. Vertical divisions between these traditions are not always recognizable, since elements which appear to be characteristic of a particular tradition are observed to occur in another. It appears from the field-data at hand that the three traditions mainly are but integral components of one great culture complex.

In peninsular India, specially on the east coast round Madras as the main focus, we have a pronounced core-tool tradition⁷, mainly comprising the biface, the associated flakes and the cleaver. The biface first appears in the Boulder Conglomerate and the cleaver a little later and both show remarkable development in the succeeding lateritic phase and the terrace stages. The biface industry, which predominantly includes the handaxe on core, is characterized by a great variety of forms and several stages of the handaxe development

are distinguished. The two terrace stages in Madras reveal in their lithi-cultural horizons a remarkable development of the handaxe and the cleaver, characteristic of types resembling the Upper and Late Acheulian respectively. The second terrace clearly reveals the application of core-flake techniques in the development of the biface and the cleaver. In the Attrampakham terrace (T_2), bifacial, partly bifacial and unifacial handaxes and cleavers on flake occur associated with the normal kinds of the biface on core. Besides, characteristic techniques resembling the Vaal or Pniel techniques are observed and such *variant* types with triangular or parallelogrammatic cross-sections are not infrequent. In Mayurbhanj, in Orissa on the east coast, in the detrital laterites, there is the same preponderence of biface core-tools as in Madras, but the flake-types of the biface and cleaver are comparatively few.⁸ Among the biface, types resembling the Middle Acheulian occur along with Abbevillian—Early Acheulian types.

Besides the east coast, similar biface and cleaver industries also occur further inland in Madras, Mysore, Andhra, Hyderabad as well as in Bombay on the west coast. Northward in the Narmada valley in Madhya Pradesh and further on the northern border of the Peninsula in the Singrauli basin (Son-Rihand valley) in Uttar Pradesh, biface core industries are conspicuous by their presence. The biface also occurs north-eastward in southern Bihar (Manbhum-Singbhumi).⁹ Stray finds of the biface have been reported* from Monghyr (in north Bihar) in the Gangetic valley. Thus the distribution of the biface extends as far north-east as the Gangetic valley in eastern India. In western India, besides Bombay, Gujarat has revealed the conspicuous occurrence of the biface and cleaver in the Sabarmati-Mahi valleys. The preponderence of the biface, however, diminishes westward and northward and a marked regional difference in the frequency of core and flake elements is observed. In Gujarat, they are in equal proportions, perhaps the flakes slightly preponderating over the cores. In the north, in West Punjab, the biface occurs

*By Sri Rathindra Nath Tagore of Santiniketan.

as a complex along with the more dominant pebble and flake industries (Soan)*. In East Punjab the biface is rare, the Soan types predominating. Thus over large tracts of the Peninsula, the biface and cleaver industries are distributed and extended to the northernmost borders. They apparently disappear beyond Bihar and north of the Son valley and beyond Madhya Bharat and Gujarat. Their presence in northwest India in the Punjab as a complex is credited to the influence of the southern biface tradition. But wide spaces remain yet unaccounted for.

The occurrence of the handaxe and the cleaver on flake indicates assimilation of two techniques in the later stages (Abbevillian—Early Acheulian) of the handaxe development in India do not distinctly reveal integration of core-flake techniques, the simple core-technique is the main tradition. It appears that the people who specialized in the biface and the cleaver, later adopted and included the flake-techniques as well in their manufacture. Whether in peninsular India and elsewhere, the two techniques arose independently or whether the flake-techniques were evolved by the same people practising the biface core-techniques, is not known with certainty. The latter, however, is more probable. The occurrence of a series of cores and flakes in the terrace stages in Madras, alongside the more dominant biface and cleaver industries is significant, as the former recalls the Soan in its technique. The Attrampakham terrace in Madras is remarkable not only for the handaxe-cleaver development but also for the occurrence of cores and flakes similar to the Soan types. Pure flake culture, free of the biface, has not so far been recognized in peninsular India. On the other hand, in the north in the Punjab, a pebble-flake tradition (Soan) independent of the biface developed on its own line. Detailed analysis of the techniques involved in mixed industries so common in India is necessary to determine whether this is due to a process of addition or fusion of elements of different traditions. The flake-types of the handaxe and the cleaver occur, though

*Soan or Sohan.

in variable frequencies, in many other regions such as Mayurbhanj, Mirzapur, Madhya Pradesh, Gujarat and elsewhere. More detailed studies regarding the spatial and vertical distribution of such artefact types and their frequencies would yield valuable results. The statistical and serialisation techniques of analysis as demonstrated by Bordes¹⁰ and Paterson¹¹ respectively may be also tried in India. The first is a method for assessing the technological increment in a given assemblage, while the second is a method for determining the dominant and secondary elements in a mixed industry. For want of time, exposition of the above-mentioned techniques is not attempted here.

On the whole, it appears that a dominant core-tool tradition with the biface and the cleaver as its main elements is spread over the larger part of peninsular India (pronounced in the south-east coast) and that along with the core-techniques, specially in the later stages, flake-techniques were employed in the manufacture of the same tool-forms. A similar core-tool tradition also prevails in Africa and Western Europe. The European distribution of the biface, however, in the Abbevillian-Acheulian tradition is a small marginal extension from an original centre in Asia or Africa¹². The southern origin of the handaxe culture seems to be taken for granted. It is interesting to note that the African (Stellenbosch-Fauresmith) and the Indian biface and the cleaver (Madrasian) are in many respects strikingly similar.

Within the Lower Palaeolithic culture-complex of India, there is another distinctly characteristic industry—that of the so-called pebble-tools. Naturally where pebbles are the main raw materials and are themselves suggestive of certain convenient forms, they are flaked by a simple core-technique to appropriate forms and defined working edges. Generally a large pebble-surface is left unflaked, which serves as the posterior or the butt-end of the tool. Pebble-tools may be classified on the basis of form and technique but the working edge is a distinguishing criterion. A flat pebble may be flaked on one surface along a side or end to form a simple working end by the intersection of the flake scars with the pebbly under-

surface, or a round or discoid pebble may be flaked on two surfaces at one side or end by alternate flaking, producing a wavy or jagged working edge which may be convex or straight. Tools mainly with these two types of working edges on pebble are common in India and may be designated as *pebble scraper* and *pebble chopper* respectively. The first type is described by Movius¹³ as *chopper* or *scraper* and the second as *chopping-tool*. Leakey makes no such distinction. The tool-type of the Oldowan described by Leakey¹⁴ as a chopper is characterized by alternate flaking (two directional flaking) on two surfaces along one side of the pebble. Associated with this, there is a simpler type in Oldowan described by Leakey as made on a flattened pebble from which a few flakes have been removed in one direction only so that the cutting edge is formed by the intersection of the flake scars with the flat face of the pebble. This type is defined as *chopper/scraper* by Movius. More simple and perhaps more appropriate nomenclatures for these tool types would be *chopper* and *scraper* in place of *chopping-tool* and *chopper/scraper* respectively. It is however admitted that functional classifications are not often satisfactory.

In addition to these two basic types, a third type is also conspicuous by its presence in peninsular India, which may be described as a crude handaxe on pebble, characterized by flaking in three or four directions on both the surfaces at one end converging to a point. In peninsular India, as in Madras, Mayurbhanj, Mirzapur and elsewhere, pebble-tools (including the chopper and the scraper), are free of the biface and occur as an integral part of the Soan culture. As yet, however, no horizon (pre-handaxe) containing primitive pebble-tools exclusively has come to light in India like the Oldowan (Bed I) in the Olduvai gorge in Tanganyika. Both the Early and Late Soan show characteristic flake techniques coupled with the constant use of pebble-tools, and such pebble-tools along with the flakes develop independently of the biface complex. It should be noted that pebble-tools (including the chopper and scraper types) appear *earlier* in peninsular India than in the Punjab. The Upper Siwalik Boulder Conglomerate,

which is the earliest tool-horizon (Pre-Soan flakes) in the Punjab, has not revealed any pebble tool nor any biface, whereas, a boulder conglomerate horizon in Madras (also in Mayurbhanj), which appears to be a corresponding deposit, reveals the presence of pebble tools along with biface core-tools and associated flakes. In Gujarat, pebble tools appear in a cemented gravel but disappear from the overlying silt. Thus the context of the occurrence of the pebble tools in the South is in sharp contrast with that of the pebble tools in North India. The constant association of pebble tools and bifaces in the early stages in peninsular India with certain similarity in basic technique suggests that they may be elements of the same tradition, or related to it, whereas the pebble tools in north India occur as an essential element of an altogether different tradition which is free of the biface.

Outside India, pebble tools, similar to those of the Soan and free of the biface technique, occur in the Anyathian of Burma and Choukoutien of N. China. In South and East Africa, the Pre-Stellenbosch and the Kafuan-Oldowan respectively are essentially pebble tool industries unassociated with the biface or flakes. According to Leakey, the simple pebble tools of the Oldowan, which constitute the earliest lithic industry in Oldoway, have evolved into the biface handaxe in the succeeding beds. The pebble tools however persist along with the development of the biface. The first stage of the evolution of the handaxe is represented by crude proto-types on pebble—having an essential technique—flaking in 3 or 4 directions and intersection of two jagged cutting edges in a point at one end. In peninsular India, the occurrence of crude proto-types of handaxes on pebbles reminiscent of Oldoway Bed II is typologically suggestive of a transitional stage. The sequence of tools in Mayurbhanj seems to be from crude choppers and handaxes on pebbles to finer bifaces and cleavers. The frequency of the occurrence of pebble tools in the basal gravels suggests that they formed a basic lithic complex or tradition in the South.

Movius¹³ contends that the primitive pebble tools of the "chopper-chopping" kinds comprise a sort of basic substratum in

Africa, Southern India, the Near East and Europe and that with the gradual development of the bifacial handaxe, these became of secondary importance. The tradition, however, he further contends, persisted and continued to develop independently of the biface in S.E. Asia, N. India and China as a distinct part of the Lower Palaeolithic culture-complex. So far as India is concerned, two distinct trends of the occurrence and development of pebble-tools can be observed. In the South, pebble tools which seem to appear earlier as a basic complex of the biface tradition, show a continuity with and subsequent absorption by the biface. In the North, pebble tools appear free of the biface and integrally associated with Clacto-Levalloisian techniques. They show a vertical continuity and progressive development of flake techniques. In the early stages (Early Soan), the pebble tools are more numerous but later (Late Soan) they fall in number in comparison with the increasing flakes. According to Movius, the Soan, the Early Anyathian and the Choukoutien represent a continuum of an archaic "chopper-chopping" tool tradition and constitute an "eastern culture complex". Within this complex, the pebble tools are free of the biface. It may be noted here that the Soan pebble tools are neater and more finely made than the pebble tools of peninsular India which are cruder and of inferior workmanship. In this context, till a wider distribution of primitive pebble tools (including "the chopper-chopping tools") in India, similar in technique, is observed and a spatial continuity is recognized, it would remain an open question whether an ancient tool tradition emerging from a basic substratum becomes involved with the biface in the south and persists free of the biface in the north. The theory of a basic pebble substratum in India would in the ultimate analysis depend upon the recognition of a basic horizon containing pebble tools only or showing a pebble tool increment of chopper and scraper types. This would also involve the consideration of a problem whether the southern biface tradition and the northern pebble-flake tradition are linked with a common primitive stock of pebble tools.

Two main techniques of detaching flakes from cores

are characteristic of the Lower Palaeolithic. The more simple and basic method consists in detaching the flake by a swinging blow on the core without any preparation of the core, so that the flakes have plain (unfaceted) platforms and high angles—this being the so-called Clactonian technique. The other technique, which is more evolved, consists of careful preparation of the striking platform and of the entire upper surface before the flake is detached from the core by a more or less vertical blow, so that the flakes have faceted platforms forming a right angle with the main flake surface—this is the so-called Levalloisian technique. In Europe, the occurrence of such flake types with their appropriate cores (technically grouped) having spatial and chronological distributions constitutes the Clactonian and Levalloisian traditions respectively, which are free of the biface technique. On the other hand, biface cultures have their flake tools as well, but these flake tools are comprised within the biface (Acheulian) tradition. Flake types which have no distinct traditional significance should be dissociated from the cultural or traditional names—Clactonian or Levalloisian, and instead, plain flakes or faceted flakes should be used to describe them. The use of the terms, Clactonian and Levalloisian (and for that matter, Abbevillian-Acheulian) in Asian or African typology should be restricted only to their technical meanings and such nomenclatures as "Clactonian flake" or "Levalloisian flake" should be avoided. In India, the two main techniques described above are recognized among the flake tools.

The Indian flake culture appears to have its main concentration in the Punjab, where it is known as the Soan, this being generally free from the biface technique. In the Soan-Indus valleys in West Punjab, the biface, which is present as a distinct complex alongside the Early Soan, generally disappears from the Late Soan. In the East Punjab (in PEPSU) in the Sutlej-Sirsa valleys, the Soan types of flakes and pebbles occur so far without the biface complex. A series of very primitive flakes designated as Pre-Soan occurs in the Boulder Conglomerate in West Punjab and constitutes the earliest tools in N.W. India. These are crude, rolled, massive and highly

cortexed and have plain platforms and large angles. The nature of their occurrence and their comparative scarcity do not admit of the recognition of any defined industry. Apparently these flake types are of unknown tradition. Their relation, if any, with the Soan flake industry is uncertain. Neither the biface nor the pebble-tools and flakes, so conspicuous of the terrace stages, is found in this horizon. Apparently these flake types disappear in the Second Interglacial.

The Soan is essentially a tradition of pebble and flake tools free of the biface technique like the Early Anyathian* of Burma and Choukoutien of China and ranges in age from Second Interglacial to the Third Interglacial. It carries core-flake techniques like the Clacto-Levalloisian tradition of Europe. The Early Soan flakes show a simple Clactonian-like technique, mostly having high-angled unfaceted platforms. The Late Soan which is characterized by flake-tool increment shows a marked development in technique—multifaceted platform and prepared core technique, resembling the Levalloisian of Europe. The final stage of the Soan development reveals flakes of Late Levalloisian types. A Mousteroid technique † is discerned among the Late Soan flakes and it appears from Paterson's observations that the Mousterian technique perhaps evolved in India earlier than in Europe. The peculiarity of the Soan culture as a whole in contrast to other contemporary cultures of India is that it carries three lithic traits in integral association—pebble-tools, pebble-cores and flakes and that, with rare exceptions, it is generally free of the biface. It is however felt that the techniques involved within both the Early and the Late Soan should be more fully studied and the frequency of the pebble, core and flake elements determined, so that the true nature of the Soan and its affiliations may be clearly understood.

That there is a contact at a site in the Soan valley with the biface complex is interesting. If further sites are explored and more *in situ* specimens collected from datable horizons, it may be possible to determine the results of the contact. This

* Unlike the Soan, flakes are rare in Early Anyathian.

† Step flaking with squat flake-scars and "police-hat" platform.

would be interesting in view of the fact that in many of the sites in peninsular India and elsewhere, the biface and flake techniques are integrally associated.

In the South, the earliest flakes appear in a Boulder Conglomerate zone near Madras, associated with pebble tools and bifaces. The flakes are unfaceted, highly cortexed, with little primary flaking and no retouch and appear to be a part of the biface industry. In the succeeding phase, that of the lateritic gravels, the bifaces and the flakes show a further development. The flakes have their upper surface covered by primary flaking but still are unretouched and unfaceted. In the next stage (corresponding to T₁), the bifaces become more evolved, discoidal cores are present and the flakes are uncortexed and thin and show retouch but no facetting of the platform. In all the three phases, the biface preponderates over the flakes. The terrace stages at Attirampakkam and elsewhere reveal, besides late Acheulian types of handaxes and cleavers, a series of discoidal cores and flakes, many of which are faceted, resembling the Late Soan technique. In Mirzapur, in the Singrauli basin, associated with a dominant biface industry, occurs a series of flakes which recall the Soan flaking techniques¹⁵.

In the middle Narmada valley in Madhya Pradesh, the Lower Narmada group reveals the presence of Early Soan flake types and pebble tools, associated with the biface recalling the Madrasian, the former relatively more abundant than the latter. The Upper Narmada group, on the other hand, is characterized by the absence of the biface and the presence of Late Soan types of flakes and pebble tools.

In Western India, in Gujarat, in the valleys of the Sabarmati and Mahi, mixed industries of pebble tools, bifaces and flake tools occur in two implementiferous horizons—the gravels and the overlying silts. No typological succession is observed, but pebble tools characteristic of the gravel disappear from the silt. Crude tools occur alongside finer ones and no distinct evolution is recognizable. Besides pebble tools and Abbevillian-Acheulian types of bifaces, discoid cores and numerous flakes occur, which recall the Soan. The proportion

of core and flake elements appears to be equal or slightly in favour of the latter. Among the flakes, Clactonian-like wide-angled unfaceted platforms are more common but alongside a few Levallois-like low-angled faceted flakes also occur. Zeuner¹⁶ describes the Sabarmati industry as a combination of Late Soan and Middle to Late Acheulian elements. The nature of the contact is yet to be determined. Since it appears to be a mixed industry, typological correlation would depend not only on the exact recognition of the techniques involved but also on the relative frequency of the constituent elements and resultant technological increment.

On the west coast of Bombay (Khandivli), in a succession of clays and gravels, an interesting development of cores and flakes in mixed industries is observed. The sequence starts with crude choppers, cores and plain flakes, followed by Abbevillian bifaces and flakes which are Clactonian-like in technique. This is followed by Late Acheulian types of bifaces and cleavers, along with flakes which show Clactonian technique. This series is succeeded by small handaxes on flakes, associated with blades. The last in the sequence is comprised by a blade-and-burin industry, perhaps of Upper Palaeolithic date. Late Soan types seem to be absent and Levallois-like techniques are not observed. The techniques of the flake types and the relative frequency of core and flake elements in the gravels and clays need special study.

Thus the flake types and their occurrence in India in different contexts have been imperfectly studied. It appears, however, that as yet in India, no other flake tradition as distinct from the Soan has been recognized and that pure flake industry free of the biface does not so far occur elsewhere than in the Punjab. In peninsular India, the flake types as such do not appear to have a distinct or separate cultural entity. A considerable number of flakes occurs within the biface culture and reveals a simple Clactonian-like technique. Flakes produced as debitage of the biface are utilized or retouched as tools, but these do not resemble the Clactonian. The proportion of these flakes in relation to the biface has not however been determined in India. The biface tradition in India does not contain the biface

element only, the flakes constitute an important secondary element. At several places, the Soan elements in contact with the biface in the same lithicultural horizons have been recognized, but their presence far in the South at about the same time as in the North has to be satisfactorily explained in view of the great distances involved. Besides chronological relation, the geographical mobility of a culture has to be taken into consideration when we recognize that culture away from its homeland before we can correlate it within the corresponding climatic phase.

In the organization of palaeolithic studies in India, a systematic mapping of the Pleistocene formations and their exact dating in climatic terms is essential for the reconstruction of the true historical order and temporal sequence in which the various lithic traits emerged. But the Pleistocene chronology of India is still undeveloped and the Pleistocene formations are largely unsurveyed and unmapped. A good deal of geological observation and field-data would be necessary before a useful system of chronology like that of Europe or Africa is evolved. The Pleistocene was a period of great climatic changes, the geological and palaentological results of which are basic in determining the smaller subdivisions. In the North, in the glacial and periglacial tracts, the glacial cycle provides the necessary chronological framework. In regions remote from and indirectly associated with glaciation, and having no direct means of correlation, the necessary chronology must be based on the regional climatic fluctuations in rainfall and aridity as geologically evidenced in depositional and erosive processes, soil characters and faunal or floral differences. The problem of chronology of such regions of India is discussed in a later section.

The Plio-Pleistocene boundary in India, with which the relative age problem of Man is connected, is not yet clearly defined. In North India, the Tatrot and the Pinjor stages of the Upper Siwaliks are comprised within the Lower Pleistocene, and the Boulder Conglomerate stage within the Middle Pleistocene, by De Terra and others¹⁷. The first appearance of Villafranchian fauna such as *Equus*, *Elephas* and *Bos* in the

Tatrot-Pinjor stages is regarded as the beginning of the Pleistocene. On the other hand, Pilgrim¹⁸ and others draw the boundary line above the Villafranchian and regard the Upper Siwalik Tatrot and Pinjor stages as of Pliocene age, while the Boulder Conglomerate stage is referred to as Lower Pleistocene. We are thus confronted with two different views about the age of the Boulder Conglomerate, namely, Lower and Middle Pleistocene. This apart, the Boulder Conglomerate has been correlated with the Second Glaciation and the Tatrot and the Pinjor with the First Glaciation and First Interglacial respectively by De Terra. According to Pilgrim, the Bain Boulder Bed (in N. W. Frontier Province in Pakistan) is the equivalent of the Early Glaciation and the Boulder Conglomerate stage, divided into a lower and an upper stage, is correlated to the First Interglacial and the Second Glaciation respectively. Since however, the earliest artefacts (Pre-Soan) in N. W. Punjab are located in the upper layers of the boulder fan and plains gravel, the emergence of Early Man in North India can tentatively be placed towards the *end* of the Second Glaciation, thus envisaging a late date for Early Man in North India in comparison to Europe and Africa. Assuming that the Second Himalayan glaciation is contemporary with the Mindel of Europe, the radiation date of this event is estimated to be about 435,000 years before the present.

By correlating the terrace system of the Punjab with the moraines of the Himalayan glaciation, De Terra and Paterson have developed a useful Pleistocene chronology for the plains. Five terraces are recognized, of which the second and the fourth are glaciifluvial (aggradational) and are correlated to the third and fourth glaciations respectively, while the first, third and the fifth, which are erosional, are correlated to the second and third interglacial and postglacial respectively. The lithicultural horizons in the terrace system within the Pleistocene are thus dated in terms of the glacial cycle. The Early Soan with the biface complex (from T₁) is dated within the Second Interglacial and the Late Soan, (from T₂) as within the Third Glaciation. The evolved Soan (from T₃) is dated within the Third Interglacial. Thus the Soan as a whole, dates from

the Second Interglacial and persists into the Third Interglacial. The first and the second terraces of the Potwar region would be comprised within the Middle Pleistocene on the basis of the association of bifaces and Soan type of tools with Middle Pleistocene fauna in the Narmada valley. The two latter terraces are dated within the Late Pleistocene.

In the absence of terrace records in the Narmada, certain difficulties are involved in correlating the Narmada chronology with the terrace sequence of the Soan. Palaeontologically, both the Lower Narmada and the Upper Narmada groups are dated as Middle Pleistocene and archaeologically are correlatable to the Early Soan and Late Soan respectively. De Terra's suggested correlation of the stratigraphic horizons of the Lower and the Upper Narmada zones with the four terraces (T_1 to T_4) of the Soan on archaeological grounds is somewhat anomalous and is not clearly corroborated by geological and palaeontological evidence, for, on the one hand, both the Narmada groups carry Middle Pleistocene fauna, and on the other, the Soan industries of the Punjab are mainly of T_1 and T_2 stages respectively. Typologically correlated with the Narmada, the first two terrace stages of the Punjab would be comprised within the Middle Pleistocene.

So far as the Punjab and other periglacial regions are concerned, this framework of climatic chronology for the post-Sivalik terrace system with its lithicultural horizons, provides a tentative, albeit useful, working basis. There is however scope for a re-examination of the Plio-Pleistocene boundary and of the exact geological age of the three Upper Sivalik stages* including the Boulder Conglomerate stage which is taken as a datum-line by archaeologists for the human culture-sequence. This involves a revision of the three-fold geological division of the Pleistocene and the exact placement of the corresponding lithicultural horizons within this division.

The climatic correlation of the Pleistocene events in the tropical regions of India with the northern glaciations is a complex problem as there are no direct means for such correla-

*A geological mapping of the Sivaliks in the Punjab has been taken in hand by the Geological Survey of India.

tion. Whether pluvial phases correspond to glaciations, is a problem which has not yet been solved. No doubt, the tropical Pleistocene is characterized by repeated climatic changes—phases of increased precipitation followed by increased aridity, and the geological evidence of such changes, if any, must be recognized in the reconstruction of the climate. In other words, the cyclic geological processes of deposition and erosion are to be interpreted in climatic terms. The task is rendered more difficult because it is by no means certain as to which particular climatic shift is responsible for aggradation or degradation. The recent trend is to correlate aggradation with more humid climate and degradation with more arid climate, but contrary observations that increasing aridity and decreasing aridity are responsible for aggradation and degradation respectively also prevail¹⁷. These difficulties are seriously realized in India and attempts are being made to reconstruct regional climatic sequences on local geological evidence. When stream terraces are recognized, it is advisable to examine each terrace system in a given region in the context of its local set-up. The cyclic pattern of a region must be reconstructed independently before tele-correlations are attempted.

A climatic sequence for Gujarat has been built up by Zeuner on the basis of his observations in the Sabarmati (and other river) sections, which reveal repeated oscillations of climate between relatively damper and drier conditions. Within this sequence, which starts from the laterite, only the cemented gravel phase (humid) and the succeeding silt (dry) phase constitute the two palaeolithic horizons. The cemented gravel rests in most places on a mottled clay or on the bed-rock. The mottled clay is underlain by laterite. The cemented gravel has also been observed in some sections to rest on a lateritic weathered surface. The silts which form the highest beds containing palaeolithic tools underlie the red soils. So far, the laterite, the mottled clay and the red soils are conspicuous by the absence of any artefacts. Zeuner regards the Sabarmati industry as post-dating the last (or the first in the reverse order) humid period (that of the lateritic formation) and as well within the Pleistocene, since it is covered by a

formidable thickness of strata and two periods of weathering. As climatic correlation with the North has not been possible, the Sabarmati industry is tentatively dated as Third Glaciation on the basis of typological correlation. In any method of scientific dating, typological correlation is taken to as a last resort when all other avenues have been explored. When a climatic succession within the Pleistocene has been recognized in a region, it is best to refer the industry in terms of the regional climate.

The age problem of Early Man in peninsular India is connected with the occurrence of implementiferous boulder conglomerate and detrital laterite, the latter forming extensive peneplains. The boulder conglomerate no doubt represents a humid phase, but whether it corresponds to the Second Glacial boulder conglomerate in the North remains to be proved. The Madras boulder conglomerate conformably underlies the detrital laterite, the precise age of which is also a problem in geology. On the basis of typological correlation with the Mid-Pleistocene Lower Narmada zone and with the Mid-Pleistocene sequence starting from the Boulder Conglomerate zone in the Punjab, the boulder conglomerate deposit in Madras has been dated by Krishnaswami as Middle Pleistocene. The equivalent or the corresponding phase of the Upper Siwalik boulder conglomerate in the Narmada however remains to be explored. Besides, the Madras boulder conglomerate deposit is not typologically correlatable with the Upper Siwalik boulder conglomerate, since the tool types are dissimilar. Field observations however suggest that the boulder conglomerate in Madras may represent a humid phase within the Early or Middle Pleistocene, perhaps early rather than late as the archaeolithic sequence, which starts from this phase, shows a continuity and development through the succeeding laterite phase to the terrace stages, covering a considerable span of time.

In Mayurbhanj in Orissa, very near the extensive lateritic sites in Kuliana, a number of sections have been observed on the river near Kamarpal which reveal some oscillations of climate between relatively humid and dry conditions²⁰. The lowest exposed bed in the sections is a sticky yellowish white

or grayish clay of uncertain depth. This is overlain by a compact pebbly laterite with characteristic vermicular structure and of mottled colour. Above this, is a deposit of boulder conglomerate divided into two sections by a thin layer of gravelly ferruginous clay. In-situ tools have been recovered from both the upper and lower sections of the boulder conglomerate. A thick deposit of alluvium overlies the boulder conglomerate. The lateritic formations and weathering suggest alternating humid and dry conditions, while the two boulder beds suggest repeated heavy fluvial conditions separated by a short dry phase. The alluvium reveals normal present day climatic conditions. The tools are crude and rolled and comprise bifaces and pebble tools and a few flakes. Typologically, the upper section of the boulder conglomerate corresponds with the lower horizons of the detrital laterites, containing the same facies of tools, including Abbevillian types of bifaces and pebble choppers. These bifaces and pebble tools resemble the types found in the boulder conglomerate in Madras, while the flakes somewhat resemble the Pre-Soan of the Potwar boulder conglomerate.

The exact geological age or climatic correlation of the palaeolithic detrital laterite of India is not known with certainty. The archaeologist thus faces a problem in his task of dating the associated industries. It is not known for certain whether the primary laterite (*in situ*) carries any artefacts. General observations are in the negative. Laterite is a product of sub-aerial weathering of certain types of rocks under humid tropical conditions (with dry phases) above ground water level. Its formation and development takes place in a complex of fluctuating climate and physico-chemical change. The compact primary laterite is formed *in situ*, while the detrital laterite is transported and redeposited material. No simple generalization as to the age of the laterite can be made. The stratigraphic pattern of each region, characterized by lateritic formations, must be investigated independently in the context of its geology and physiography. A thick deposit of detrital lateritic gravels may broadly suggest a pluvial phase and if dated within the Pleistocene, be correlated within the northern glacial sequence. In Upper Burma, the lateritic gravel (with

Early Anyathian tools) is correlated with the Second Glacial boulder conglomerate of N. W. India²¹.

In the middle Narmada valley in Madhya Pradesh, laterite constitutes one of the four main sedimentary stages within the Pleistocene and is separated from the others by a disconformity. At certain places, thick deposits of laterite capped with lateritic gravel occur and such lateritic gravels have been observed to underlie the cemented gravels of Mid-Pleistocene age. Near Hoshangabad, in a quarry in a quartzite hill, pockets of re-washed laterite containing tools have been observed. Typologically these tools resemble those of the Lower Narmada group. According to De Terra, the main lateritic formation antedates the ossiferous beds. The disconformity between the main laterite and the Lower Narmada deposits makes the main laterite here as Early Pleistocene. In Gujarat, the laterite, which is devoid of artefacts, underlies the mottled clay and the palaeolithic gravels. It appears from Zeuner's observations that the laterite may at the latest be of pre-palaeolithic age and be placed either immediately prior to the formation of the palaeolithic gravels or with a long interval. On the basis of typological correlation of the Gujarat palaeolithic gravels with the Potwar gravels of Third Glacial age, the underlying laterite (in Gujarat) would appear to correspond to either the Second Glaciation or the Second Interglacial.

In Madras (as at Vadamadurai), the palaeolithic detrital laterite rests on a boulder conglomerate of Lower or Middle Pleistocene age. On archaeological similarity (with the Narmada and the Soan), the age of this Madras laterite, according to Krishnaswami's observation, is Mid-Pleistocene. If the dating of the Middle Acheulian type of biface in the Punjab as Second Interglacial is correct, the detrital laterite in Madras would typologically fall within the Second Interglacial. On the same basis, the Kuliana palaeolithic laterite in Mayurbhanj would be dated as Second Interglacial within the Middle Pleistocene. No doubt the Kuliana laterite bears a striking typological similarity with the Madras laterite, but the problem of geologic or climatic dating of the laterite should be tackled independently of its typology. The detrital laterite in Madras

antedates the terrace formations. The laterite peneplain (T_0) was eroded to a terrace (T_1). No terraces are so far recognized in Kuliana corresponding to Madras. Geological observations in Mayurbhanj indicate that the detrital laterite postdates the Miocene limestones which underlie the former. In a section at Kuliana, the implementiferous detrital laterite rests on a deposit of primary laterite, which overlies a sticky white clay of unknown depth, while in another section (Quarry C) it is observed to rest on a boulder conglomerate deposit which is lateritized at the top. Observations on the river sections in the neighbourhood suggest a succession of pluvial and dry conditions and a possibility of correlating the palaeolithic Kuliana laterite within the succession.

The two terrace stages in Madras are not yet climatically correlated. The first terrace cut in the detrital laterite is erosional and appears to correspond to the Mid-Pleistocene Second Interglacial erosional terrace (T_1) of the Punjab according to Krishnaswami's observations. The second terrace in Madras is depositional and may correspond to the Third Glaciation. The first terrace here reveals Upper Acheulian types of bifaces and Early Soan elements, while the first terrace in the Punjab reveals Abbevillian and Early to Middle Acheulian types of bifaces alongside Early Soan pebbles and flakes. This would suggest Second Interglacial date for the Abbevillio-Acheulian biface industry. The Attirampakkam terrace (T_2) in Madras reveals a further development of the biface and the cleaver (Late Acheulian) alongside cores and flakes resembling the Late Soan of Third Glacial age. Thus, on the tentative basis of typological correlation of the lateritic regions under review, and assuming the above terrace correlations to be correct, the palaeolithic detrital laterite of peninsular India would fall in a climatic phase corresponding to the end-phase of the Second Glaciation or the initial phase of the following interglacial. It is possible that the palaeolithic laterite (detrital) formation generally dates from within the Second Glaciation to the beginning of the Second Interglacial.

[A Table showing the main Lower Palaeolithic development

in India mostly based on tentative typological correlations is herewith appended.]

In the light of the foregoing chronological review of the Lower Palaeolithic industries of India, we observe that the First Glaciation and the First Interglacial in the North are so far conspicuous by the absence of any human industry. The corresponding climatic phases in the South have not been clearly recognized and our knowledge about the presence or absence of any human industry during these phases is uncertain. Climatic fluctuations between more humid and relatively dry conditions are however generally observed within the tropical Pleistocene. It is possible that the main (primary) lateritic formation in Madhya Pradesh considered as pre-human, may represent an early pluvial phase and be comprised within the Early Pleistocene.

During the second glaciation, the archaeological sequence in the North starts with a series of primitive flakes (Pre-Soan) in the Boulder Conglomerate stage, while in the South, the biface appears with a pebble-complex and the sequence generally starts with crude pebble tools, bifaces and flakes (Abbevillian—Early Acheulian) in a boulder conglomerate deposit, the exact geological age of which is yet unknown. Comparative geological and typological observations, however, tentatively suggest its inclusion within the Early or the Middle Pleistocene age. Its climatic correlation would ultimately fix its exact date.

In contrast to the South, pebble tools and bifaces do not appear in the North till the Second Interglacial times. During the Second Interglacial, a pebble-flake tradition (Early Soan) arises in the North and simultaneously a *biface complex* also makes its appearance. In the following Third Glaciation, the biface apparently disappears and is replaced by a developed flake tradition (Late Soan). During the Last Interglacial, there is a further development of the Late Soan and at one place a contact between Late Acheulian and Late Soan elements is observed. By the end of the Last Interglacial, the Soan (evolved) disappears and is probably replaced by a flake-blade industry.

During the Middle Pleistocene, in the Narmada region in Madhya Pradesh, a similar lithicultural development was tak-

LOWER PALAEOLITHIC DEVELOPMENT IN INDIA

(Mainly Based On Typological Correlation)

RELATIVE CHRONOLOGY		N. INDIA (PUNJAB)		C. INDIA (NARMADA)	W. INDIA (GUJARAT)	PENINSULAR INDIA	
	Geological Climate					MADRAS	MAYURBHANJ
UPPER PLEISTOCENE	Last Glaciation Last (Third) Interglacial	Evolved Soan	Biface (Late Acheu- lian)				
	Third Glaciation	Pebble and Flake Tools (Late Soan)	?	Pebble and Flake Tools (Late Soan)	Pebble and Flake Tools (Late Soan) + Biface (Middle to Late Acheulian)	Pebble and Flake Tools (Late Soan) + Biface (Late Acheu- lian)	
MIDDLE PLEISTOCENE	Second Inter- glacial	Pebble and Flake Tools (Early Soan)	Biface (Abbevillian— Early to Middle Acheulian)	Pebble and Flake Tools (Early Soan) + Biface (Abbevillian- Acheulian)	?	Pebble and Flake Tools (Early Soan) + Biface (Upper Acheu- lian)	
			Flakes (Pre-Soan)			Biface (Middle Acheulian) + Pebble Tools	Biface (Middle and Early Acheulian) + Pebble Tools
LOWER OR MIDDLE PLEISTOCENE	Second Glacia- tion			?	?	Biface (Abbevillian- Early Acheu- lian) + Pebble Tools	Biface (Abbevillian) + Pebble Tools
LOWER PLEISTOCENE	First Interglacial First Glaciation						

ing place corresponding to the Early and Late Soan respectively. Early Soan elements with a biface complex appear in the Lower Narmada group and are replaced by the Late Soan elements in the Upper Narmada group. Typologically correlated with the Soan, the Middle Pleistocene Lower and Upper Narmada industries would fall in the Second Interglacial and Third Glaciation respectively. In Mirzapur, probably during the Middle Pleistocene, a biface industry appears with Soan complex. Probably during the Third Glaciation, a mixed industry appears in Gujarat which shows a contact and a probable fusion of Late Acheulian and Late Soan elements. A biface industry mixed with Soan elements appears in Bombay during the Middle Pleistocene.

During the Middle Pleistocene in the South on the east coast, in the detrital laterite, which probably corresponds to the Second Glaciation or the Second Interglacial, the biface shows further development, the cleaver makes its definite appearance and the pebble tools show a continuity. Among the bifaces, alongside the earlier types, tools showing finer workmanship resembling the Middle Acheulian appear. The cleaver shows a development from crude to finer types and the same on flake appears. In the North, the Soan Acheulian appears in the Second Interglacial terraces.

The first terrace stage in Madras, which represents a long erosional phase corresponding to the Second Interglacial, reveals the presence of Early Soan types of artefacts besides a continuity and development of the biface (Upper Acheulian). Perhaps corresponding to Third Glacial times, Late Soan elements appear in the Madras region in the second terrace stage, and alongside, at the same time, there is a remarkable development of the biface and the cleaver by core-flake techniques as revealed in the Attirampakkam terrace. The same elements seem to appear in Gujarat during the Third Glaciation. Before the end of the Last Interglacial, the biface disappears and an advanced flake industry appears which is perhaps replaced during the Last Glaciation by a flake-blade industry. Thus the Lower Palaeolithic typological succession in India begins from the Second Glaciation in the late Lower or early Middle Pleistocene

and apparently ends in the Last Interglacial or in the first phase of the Last Glaciation in the Upper Pleistocene.

Although the spatial and vertical distribution of the different lithic complexes are imperfectly and incompletely studied in India, we may tentatively make the following general observations mainly based on typological correlations :

- (1) Emergence of a pebble-tool complex in the South, during a wet phase corresponding to the Second Glaciation, along with the biface core tools, perhaps a little earlier than the latter, its continuity in the Second Interglacial and subsequent absorption by the biface. Probability of biface evolution from a pebble complex.
- (2) Emergence of a biface core-tool tradition in the South during a wet phase corresponding to the Second Glaciation, its continuity and development till the end of the Third Glaciation and its distribution northward in variable frequency in other parts of India at different times.
- (3) Appearance of the cleaver within the above tradition in the Second Interglacial or a little earlier and its continuity, and subsequent development and distribution in intimate association with the biface.
- (4) Integration of core-flake techniques in the South, specially in the later stages of the biface-cleaver development during the Third Glaciation.
- (5) Emergence of a pebble-flake tradition in the North, free of the biface, during the Second Interglacial; its continuity and development till the Third Interglacial and its distribution southward in variable frequency in other parts of India at different times.
- (6) Contact of the southern biface-cleaver tradition and the northern pebble-flake tradition in various parts of India during the Second Interglacial and Third Glacial times. Probabilities of fusion between the elements of the two traditions in the

riverine regions on the northern border of peninsular India, and in the river basins of Gujarat and adjacent tracts of the Deccan.

Compared to Western Europe, the Indian succession offers some interesting comparisons. The Early and Middle Acheulian types of the biface appear in North India at about the same time as in Europe, namely, during the Second Interglacial. In South India, however, the Madras Acheulian appears earlier in a climatic phase, perhaps corresponding to the Second Glaciation. The prepared core and faceted platform technique (Levalloisian) appears in North India (Late Soan) at about the same time as in Western Europe, namely, during the Third Glaciation. The simple unfaceted flake technique (Clactonian-like) as recognized in the Early Soan appears at about the same time as the Clactonian in Western Europe, namely, during the Second Interglacial, although a primitive Clactonian is recognized in Europe appearing in the First Interglacial alongside the Abbevillian. The Indian (Madrasian) Abbevillian does not appear till the Second Glaciation.

Compared to Africa generally, the main development of the Indian Abbevillian-Acheulian is broadly contemporary with that of the African Abbevillian-Acheulian, namely, the Middle Pleistocene. The handaxe-cleaver development in both the countries shows remarkable similarities. The handaxe and the cleaver on flake, however, appear in India at a later stage of development than in Africa. The pebble tool complex appears in Peninsular India at about the same time as the Kafuan-Oldowan in Africa. Compared to other Asian countries, the Soan tradition of North India is broadly contemporary with the Choukoutien and the Anyathian. The Early Soan, the Early Anyathian (second phase)* and the Choukoutien (of *Sinanthropous* deposits) are dated within the Second Interglacial. Some prehistorians include the Anyathian and the Choukoutien within the Soan family of traditions. The *Sinanthropous* deposit is regarded by some authorities as belonging to the Lower Pleistocene age.

In world prehistory, India is regarded as well within the

* The initial phase of the Anyathian is dated within the Second Glaciation.

orbit of two main Lower Palaeolithic traditions—a Northern flake-tool tradition and a Southern core-tool tradition. The early seats of the Northern tradition mainly comprise Eastern Europe, the Near East, Central Asia, North India and North China. The Central Eurasian belt is held to be the cradle of the main flake tradition²². The early centres of the core tool tradition lie in peninsular India and Africa, extending into Atlantic Europe and Western Asia. In contrast to this, there is another school which regards India as lying within two culture-complexes—an Eastern culture-complex and a Western culture-complex. Within the former, are comprised Java, Burma, North China and North India, while within the latter, are comprised Peninsular India, Western Asia, Africa and Western Europe. The Eastern culture-complex, according to this school, is characterized by a common basic tradition of "chopper-chopping" tools and is free of the biface, while the Western complex is essentially a biface handaxe complex.

The geographical distribution of the main traditions, however, is not at all rigid and there is considerable overlapping and fusion. In Africa and India, however, a variety of techniques is observed within the same tradition. Our knowledge about the origin and diffusion of tool-techniques and tool-forms is yet very uncertain. The general uniformity of technological patterns existing simultaneously over certain widely separated areas is suggestive of parallel evolution of the main pebble and core techniques. It is possible that from a few centres, cultures may have spread along favourable habitats. India is largely and mainly a biface core tool province like Africa. It appears that this main Indian tradition is autochthonous and that both Africa and India show the evolution of the biface along parallel lines. Perhaps from these two main centres, the biface culture spread to the West. The biface appears to have a basic pebble-complex in India and it is probable that a primitive pebble tool tradition underlies the true biface in India as in Africa.

The picture is somewhat complex in North India when we view the Soan tradition in the perspective of Asian prehistory.

It is held⁶ that in Asia during Middle Pleistocene times, N. W. India, China, Burma and Java formed a culture province free of the biface. But intermediate spatial links between N. W. India and the far-flung eastern and southern regions of the province remain to be discovered. The Soan tradition is a complex of interlocking traits—pebble-tools, pebble-cores and flakes, the latter resembling the Clacto-Levalloisian techniques of Europe. Thus, whether the root or roots of the Soan tradition lie in south-eastern Asia or somewhere in the Central Eurasian belt is not known with any certainty. Considerable opinion, however, is in favour of a Central Eurasian or West Asian source of the Soan tradition. It is possible that from such a source or sources, an early flake tradition entered northern India and that the Soan is a development of this tradition. Viewed from this perspective, the early flake provinces would appear to be primarily and mainly continental in aspect, whereas the core-tool provinces would appear to be mainly peninsular and coastal or marginal.

So far as the main Lower Palaeolithic development within India is concerned, we can picture two divergent lithic traditions—one essentially Southern and autochthonous and the other essentially Northern and probably extra-Indian in origin,—moving from opposite directions towards and across the heart of India, revealing a multitude of diverse elements in close association in several regions. Much ground, however, remains to be covered before we can reconstruct a fuller and more coherent picture. Finally, if the presence of human or hominoid fossil in India is established by skeletal remains which further exploration in the Siwalik regions or in the caves of South or Central India are likely to reveal, then a great gap in our knowledge concerning the ethnic stock or stocks responsible for these ancient human cultures would have been fulfilled.

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REPRODUCTIVE LIFE OF PAHIRA WOMEN

By AJIT KISHORE RAY

Calcutta

Introduction

IN this paper an attempt has been made to study the reproductive life of some Pahira women from a collection of pedigrees. The Pahiras inhabit the foot-hills and the slopes of the flat-topped hills of the Dalma range, which forms the boundary between the districts of Manbhum and Singhbhum. They are distributed in the villages of Khokro, Kuiani, Dhaboni, Chimgti, Botai, Kadambera, Machabera, etc., of Manbhum district. They numbered 444 (males 284, females 160) according to the Census of 1941.

Collection of Data

The genealogies (Tables A - L) were collected by the author during the months of April - June, 1953. They were collected from three villages, namely, Khokro, Kuiani, and Kadambera. The entire population of the above villages has been covered in the genealogies. All details were gathered from the head of the family and after personal inspection of the persons concerned.

Discussion

The data comprise 47 families of which 25 were from Khokro, 5 from Kuiani, and 17 from Kadambera. The population of the above three villages in April-June, 1953 is shown below :—

TABLE I
Pahira population in April-June, 1953.

Village.	Male.	Female.	Total.
Khokro	57	54	111
Kuiani	17	14	31
Kadambera	43	39	82
Total—	117	107	224

TABLE II

Analysis of Pahira Families

The following table shows a detailed analysis of 47 families. The dead husbands and wives have been included because of their surviving children. None of the 61 living wives attained menopause at the time of enquiry.

Serial No.	Village	Husbands		Wives		Children			Sex Unknown	Total Children	
		Living	Dead	Living	Dead	Male	Female	Male			
1	Khokro	23	19	29	15	53	41	22	10	2	128
2	Kulani	6	13	7	14	20	19	25	7	x	71
3	Kadambra	20	12	25	11	49	33	12	12	x	106
Total—		49	44	61	40	122	93	59	29	2	305

TABLE III
Average Children per mother per generation

Group	Generation	No. of Mother	No. of Children	Average children per Mother
Pahira	I	17	62	3.64
	II	30	115	3.71
	III	43	110	2.55
	IV	9	16	1.77
	V	2	2	1.0
Total—		101	305	3.01
Male (माले) (Rajmahal Hills)		69	278	4.03

In Table III the genealogical data have been grouped generationwise to find out whether the number of children per mother shows any variation. The I and II generations show no difference but the III generation records a significant change in the lesser number of children per mother. The IV and V generations are based upon small samples and when data from other villages are gathered, we will be able to assess properly. The downward trend in the average children per mother does however appear from the III generation onwards.

The average number of children per mother is 3.01 as compared to 4.03 of the Maler women of Rajmahal hills (Sarkar, 1944).

TABLE IV
Sex-ratio of the Pahiras

Group	Total No. of Children	Male	Female	Male : Female
Pahira	303	181	122	148.3 : 100
Male (माले)	253	106	147	72.10 : 100

The Pahira children show a high preponderance of male over female which is contrary to that found among Maler children. In tertiary sex-ratio, again the Pahiras show preponderance of males over females.

Group	Male	Female	Male : Female
Pahira	68	61	111.1 : 100

1. The exact sex-ratio could not be worked out due to 25 cases of unknown sex of the Male (माले) (Sarkar).

TABLE V

Net Reproductive Index of the various Castes and Tribes Compared

Group	Total No. of Mothers	Total No. of Daughters	N. R. I.
Pahira (author)	94	93	0.98
Mâle (Sarkar)	69	85	1.23
N. Andamanese (Sarkar)	25	29	0.86
S. Andamanese (Sarkar)	32	5	0.16
Upper Castes of Bengal (Sen)	94	318	3.32

The net reproductive index of the Pahiras shows a very interesting feature. The value is slightly less than unity, which means that the population is probably on the verge of decadence. There are few data on the net reproductive index in this country and the few available have been compared in the table. The Mâle show a net reproductive index of 1.23 as worked out from Sarkar's data (1944), while the latter's figures for the Andamanese women, which are even lower than those of the Pahiras, fit in with the present condition of the Andamanese. Sen (1953) has worked out the net reproductive index of 3.32 for the Bengali upper castes, which is much higher than that of any of the samples compared here.

Symbols used in the Tables

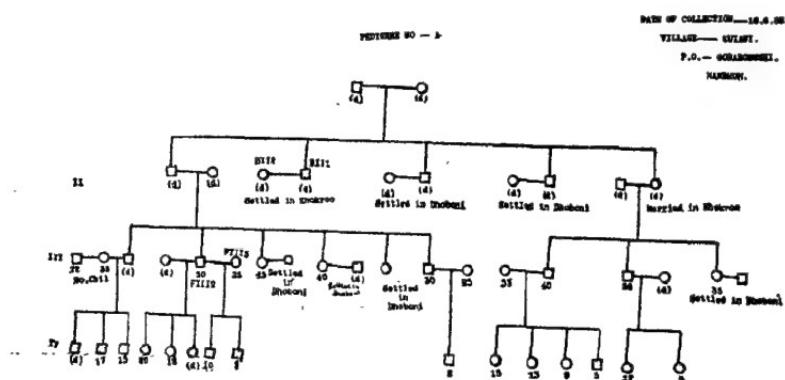
Male □

Female ○

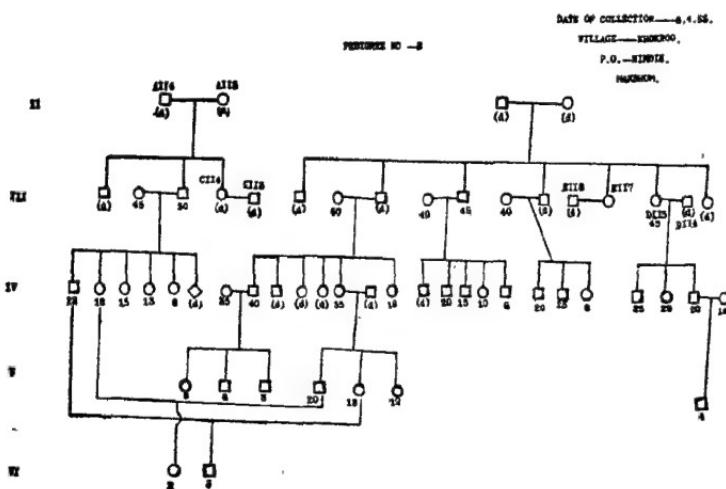
Dead (d)

Age in numbers

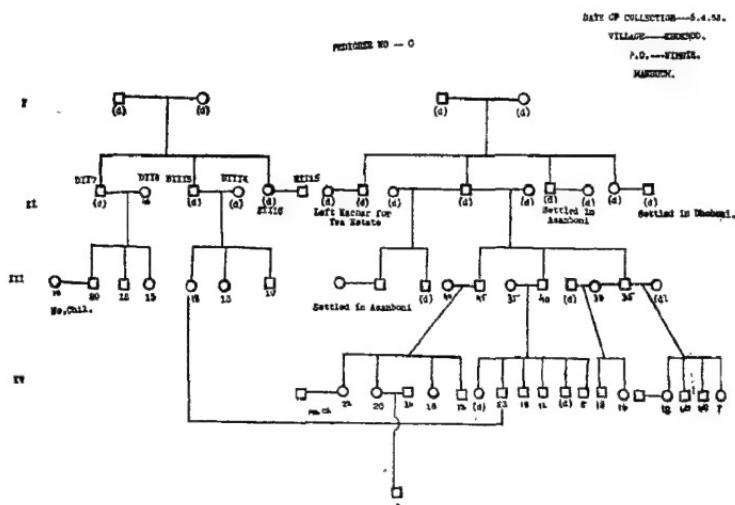
Pedigree A



Pedigree B



Pedigree C



Pedigree D

DATE OF COLLECTION - 15-5-58.

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— 2 — **OBRA DE HISTÓRIA**

MANUFACTURER

Pedigree E

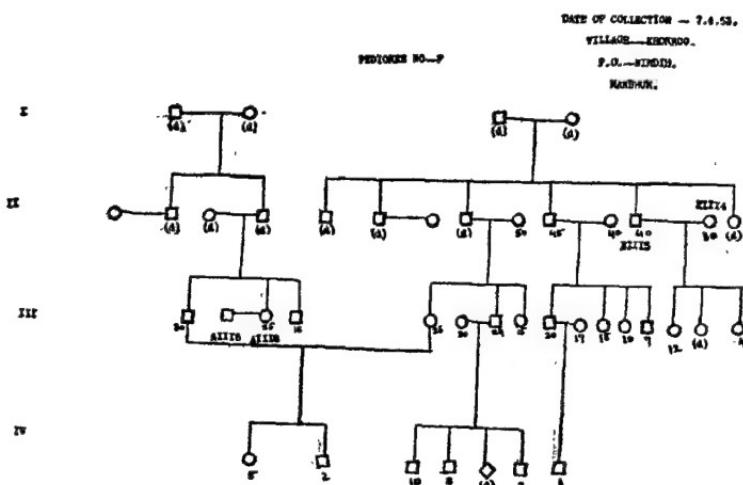
DATA OF SECTION 9—11-13

VILLAGE—KADAMBEKA.

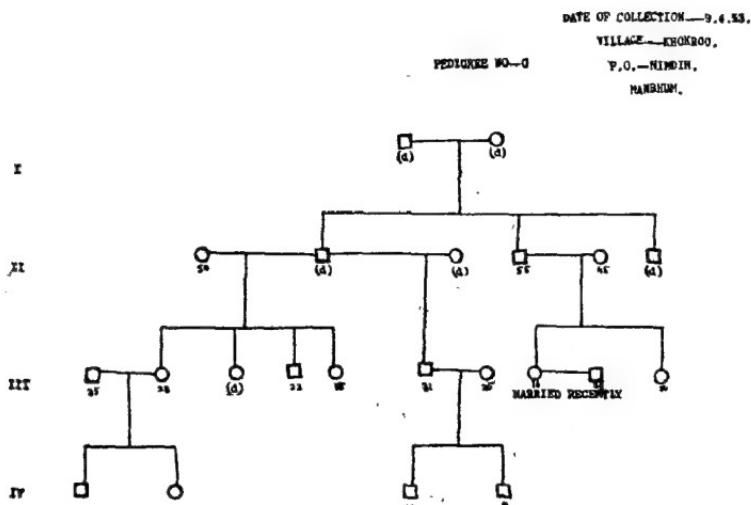
P.9.—MISAKOCHA.

卷之三

Pedigree F



Pedigree G



Pedigree H

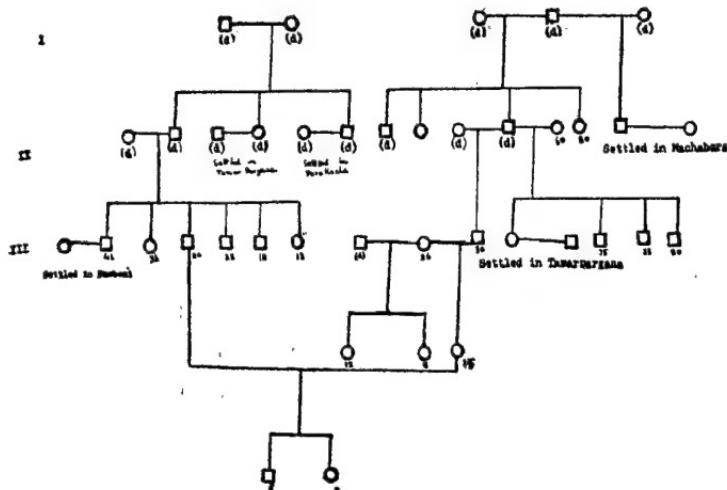
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VILLAGE—KADAMBERA.

P.O.—HISAKOCHA.

MANIPUR.

PEDIGREE NO—H



Pedigree J

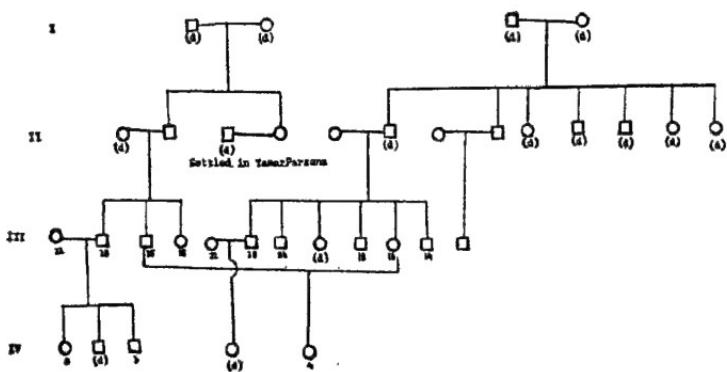
DATE OF COLLECTION—12.6.53.

VILLAGE—KADAMBERA.

P.O.—HISAKOCHA.

MANIPUR.

PEDIGREE NO—J



Pedigree K

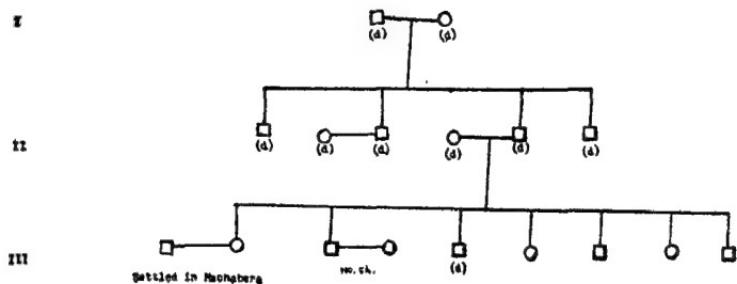
DATE OF COLLECTION—17.6.55.

VILLAGE—KUTIANT.

P.O.—GOBANCHHUSHI.

MANDIR.

PEDIGREE NO.—K



Pedigree L

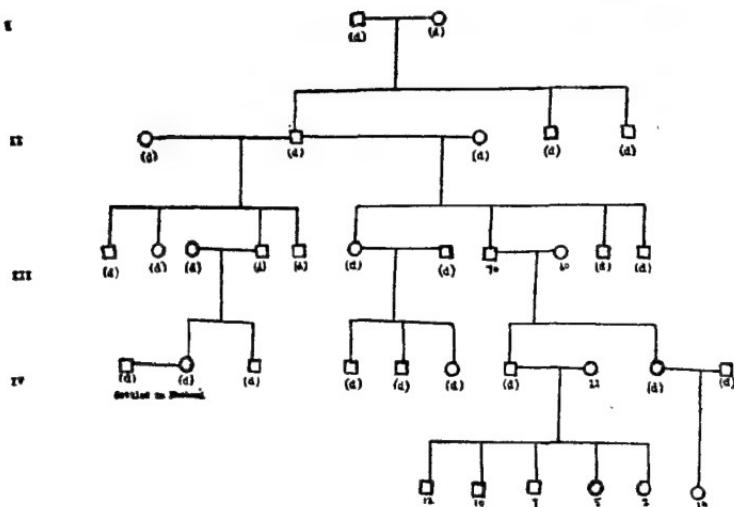
DATE OF COLLECTION—17.6.55.

VILLAGE—KUTIANT.

P.O.—GOBANCHHUSHI.

MANDIR.

PEDIGREE NO.—L



Summary

An analysis of forty-seven genealogies collected from three Pahira villages inhabiting the foot-hills and slopes of the Dalma range, Manbhum, has been made. The Pahira women have an average of 3·01 children per mother. There is high preponderance of males over the females in both the secondary and tertiary sex-ratios. The most interesting feature is the low net reproductive index of 0·98, which indicates that the population is probably on the verge of decadence. Comparison with other available net reproductive indices has been made.

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MISCELLANEOUS NOTES

CLEANING AND REMOVAL OF FUNGUS FROM CAMERA LENSES

LENSES are the soul of a camera, whether it is a cheap Box or a costly Leica. So the owner of a camera should be careful about his lenses.

To keep a lens in good condition it should be cleaned occasionally.. It should be inspected at least once in a week ; because no one can keep the lens free from moisture in the moisture-laden climate of our country. When it is not cleaned regularly the lens picks up moisture on its surface as a thin film which helps the fungus to grow. If the fungus is allowed to grow for a long time, it corrodes the surface of the lens. The fungus can be removed from the lens in the following way.

(1) First, the dirt particles on the surface are removed by blowing. Then it is washed thoroughly in distilled water.

(2) The lens is then dipped in dilute nitric acid and washed thoroughly in distilled water, and finally its surface is rubbed lightly by finger with one or two drops of xylol and cleaned by soft dry linen.

This procedure is applicable to anastigmat lenses. An anastigmat lens is generally composed of three components. They are set co-axially in a mount which can be separated individually. But difficulty arises when two lenses of different focal lengths are cemented together to form one component. Generally the fungus grows between the cemented components and, unless they are separated, the fungus can never be removed. The following five lenses affected with fungus, were

- (1) Zeiss Tessar f. 4·5
- (2) Wollensak f. 3·5
- (3) Wollensak f. 3·5
- (4) Zeiss Tessar f. 3·5
- (5) Heliar f. 4·5

treated by the writer in the Museum Method Laboratory of the Department of Anthropology, Calcutta University, in the following way.

The lenses were first removed from the cameras and the cemented components were then separated. The cemented components were suspended in boiling water for five minutes, and the canada balsam of the joined lenses was thus softened. The components of the lens were then easily separated and the lenses were dipped in concentrated xylol solution. The canada balsam was then dissolved and the lenses were cleaned by dry soft linen. After this, the lenses were cleaned with one drop of concentrated nitric acid and then the final wash was given in distilled water. The fungus was thus removed, and the lenses were then cleaned by a fine muslin cloth. Lastly, sponging the lenses with absolute alcohol was done, and they were cleaned by means of the pulp of a pith.

The next process was to re-cement the components. A transverse pencil mark had been made on the edge of the lenses which were coupled. Cementing was done with white canada balsam solution of the proper density in as thin a layer as possible. On the concavity of the concave surface of the lens a little amount of the solution was poured and the convex surface of the other component was then placed gently upon it and pressed firmly. The excess solution oozed out. It was then left for drying for three complete days. The lenses were then refitted in the mount with the other lenses and were set in the shutter of the camera.

EXPERIMENTAL DATA

Serial No.	Name of Specimen (Lens).	Condition of Specimen.	Reagents Used.	Date of Treatment.	Date up to which the specimens were under observation.	Remarks
1	f. 4. 5 Tessar	Superficial fungus attacked	Dil. xylol and Absolute alcohol	29. 9. 53	18. 10. 53	No attack of fungus noticed
2	f. 3. 5 Wollensak	Fungus in between the components	Conc. xylol dil. HNO ₃ , Absolute alcohol	1. 10. 53	21. 10. 53	
3	f. 3. 5 Wollensak	Superficial fungus	Dil. xylol and absolute alcohol	1. 10. 53	21. 10. 53	
4	f. 4. 5 Heiar	Superficial fungus	Dil. xylol and absolute alcohol	3. 1. 54	14. 1. 54	
5	f. 3. 5 Tessar	Superficial fungus	Dil. xylol and absolute alcohol	2. 2. 54	14. 2. 54	

BOOK REVIEWS

The Cultural Heritage of India, Vol. III, The Philosophies.
Second Edition. Calcutta, The Ramakrishna Mission Institute of Culture, 1953. Pp. xxi + 695 and 6 illustrations. Price Rs. 30.

The first edition of *The Cultural Heritage of India* in three volumes, published in 1937, has long been out of print. Lovers of Indian culture will, therefore, be glad to learn that a new edition is being prepared in seven volumes, each of them to be self-contained, with separate pagination, bibliography and index; and introduced by an outstanding authority.

The introduction to the present volume is from the able pen of the late S. N. Dasgupta, a better choice than whom the publishers could hardly have made. They have been equally fortunate in securing the co-operation of Professor Haridas Bhattacharyya as the editor of the volume under review.

As Volume I of the series will deal exclusively with Buddhist and Jaina cultures, and Volume II will present the ethical and philosophical speculations to be found in the epics, the Puranas and legal literature, the present volume has practically been confined to the Brahmanical systems. The work is divided into five parts. Part One, entitled the Philosophical Systems, includes a chapter on Lokayata philosophy, and leaves out Vedanta, to which the whole of Part Two is devoted. It contains 13 contributions and includes post-Sankara Advaita, besides the systems of Ramanuja, Madhvva, Nimbarka and Vallabhacarya. Part Three, the Religious Philosophies, includes contributions dealing with the philosophical thought of Saivism, Yogavasistha and the Tantras. Part Four, the Problems of Philosophy, discusses some major philosophical topics, such as the nature of the physical world, the soul and of the mind, irrespective of

their affiliation to any definite system of thought. The last part, the Philosophical Sciences, gives a synoptical view on Indian Theism, Epistemology, Psychology, Ethics, and includes contributions on the Art of Philosophical Disputations, Types of Human Nature and Philosophy of Value.

The wide range of topics will, it is hoped, attract many readers. The book is indispensable in any philosophical library. The task of the editor cannot have been an easy one. He is all the more to be congratulated in bringing out a harmonious volume, written by 39 different contributors. Some conflicting opinions could hardly be avoided ; they may be useful to impress on the reader that many a problem of interpretation of ancient texts remains unsolved. On page 111 it is stated, with good reason it seems to me, that no decisive evidence can be brought forward to show that the Vaisesika Sutras refer to God, whereas another contributor on p. 538 translates *Tadvacanad amnayasya pramanyam* as "Being His words, the validity of the Vedas". The word *tad* of the sutra definitely refers to dharma, defined in the previous sutra, and the text should be translated : "The authoritativeness of Scripture is due to its being an exposition of dharma."

A similar conflicting interpretation has been given to the theistic sutras of Gautama. On page 111, it is said that these sutras are not necessarily to be taken as proving the existence of God, whereas on page 538 the author clearly implies that, in his opinion, Nyaya was originally theistic and that the sutras in question (IV. 1. 19-21) definitely show Gautama's belief in the existence of God as the efficient cause of the world. A dispassionate study of all available material has convinced scholars that originally neither Vaisesika nor Nyaya was theistic. "It is instructive to note that in all probability the belief neither in God nor in the Veda was originally a part of the Nyaya-Vaisesika teaching" (M. Hiriyana, *Outlines*, p. 259n.). Dr. G. N. Jha went even further and held that Gautama was not a theist. (Cf. Proceedings and Transactions of the First. Or. Conf., Poona, pp. 281 ff.) The majority of scholars, however, incline to the

view that the theistic sutras do reflect Gautama's opinion and that he therefore believed in God as the efficient cause of the world. Those famous theistic sutras, when studied in their context, show that Gautama is not trying to prove the existence of Isvara (which he admits of course), but is trying to solve the apparent paradox of a Supreme Lord and an immutable Law of Karma. (Cf. *The Theism of Nyaya-Vaisesika*. The Oriental Institute, 146 Bow Bazar Street, Calcutta, pp. 27ff.)

The Bibliography does not mention the excellent monograph of H. Jacobi on the evolution of theism in India : Die Entwicklung der Gottesidee bei den Indern. Bonn, 1923. His paper on Indian Logic too is extremely enlightening : Die Indische Logik. Nachr. K. G. Wiss. Goettingen, 1901. The same scholar has written a very good treatise on early Yoga, wherein he proves the existence of early theistic schools of Yoga. Cf. Ueber das ursprungliche Yoga-system. S.B.K. Preuss. Ak. der Wiss. XXVI, Berlin 1929.

C. Bulcke

History of Philosophy, Eastern and Western. Two volumes, pp. 617 and 462. Editorial Board S. Radhakrishnan, A. R. Wadia, D. M. Datta and H. Kabir. Sponsored by the Ministry of Education, Government of India. London, George Allen & Unwin, 1953.

The two volumes under review, prepared under the auspices of the Government of India, aim at presenting a history of philosophy truly representative of the growth of human thought in the different civilizations and cultures of the world. Its second object is to give the supreme achievements of the Indian mind in the realm of metaphysics its proper place in the development of philosophical thought in the world.

The first volume, barring the last 60 pages, deals exclusively with the history of Indian thought. Having been neglected for so many decades by the Indian universities, it is only normal that pride of place should be given to Indian thought in a book which, it is hoped, will be soon prescribed in Indian universities. But even so, since the first object

mentioned above is an outline of the growth of human thought as a whole, many will feel that the ancient Sumerian and Egyptian civilizations ought not to have been totally neglected.

The first volume is divided into four parts ; the first deals with the background of Indian thought : the Vedas, the Upanisads, the Epics, Manu, Kautilya, the Visnu and Bhagavata Puranas. Part Two is devoted to the traditional schools of Indian philosophy and gives us besides the six orthodox systems, a chapter on each of the following : Carvaka, Jaina and Buddhist Philosophy, the Vaisnava Schools of Vedanta (Ramanuja, Madhva, Nimbarka, Vallabha, Caitanya), Saiva and Sakta Schools. Part Three, entitled Some Other Developments of Indian Thought, has five chapters : Scientific Thought in Ancient India, Indian Aesthetics, Growth of Islamic Thought in India, Sikh Philosophy and Contemporary Indian Thought. The last part, Chinese and Japanese thought, contains five short contributions on General Characteristics of Chinese Thought ; Confucianism and Taoism ; Indian Influence on Chinese Thought ; the Ten Schools of Chinese Buddhism ; Japanese Thought.

The first part of the second volume is entitled : Ancient Thought, Middle East and Greece, and deals successively with Persian Thought ; Pre-Socratics ; Socrates, Plato and Aristotle ; Jewish Philosophy and Neoplatonism. Part Two is devoted to Mediaeval Thought, and presents contributions on St. Augustine, Islamic Philosophy, St. Thomas Aquinas, Sufism and Christian Mysticism. The third parts deals with Modern European Philosophy : Rationalism ; Empiricism ; I. Kant ; Fichte, Schelling and Hegel ; Schopenhauer and Nietzsche. The last part, Contemporary Western Philosophy, is more extensive than the others ; it deals with British Idealism, Italian and American Idealism, Pragmatism, Evolutionism, Realism, Marxism, Logical Positivism, Existentialism with a concluding survey by the Chairman of the editorial board, S. Radhakrishnan, on Science and Philosophy.

The above analysis of the contents shows what a mine of information these two volumes represent. Each volume is provided with a separate index. The printing is excellent and

the get-up too is remarkably good. Altogether a successful venture. It is easy to find fault with some detail or other, but the great value and usefulness of the two volumes will be doubted by none. We notice that in presenting the dominant ideas of the Ramayana no effort has been made to distinguish the genuine books (II—VI) from the later added books, I and VII, and that the views of the materialists are given as if they formed part and parcel of Valmiki's epic. The episode of Jabali, where it occurs, is definitely a later interpolation.

C. Bulcke

The Religion and Philosophy of the Atharva Veda. By Dr. N. J. Shende, M.A., Ph. D. Poona, Bhandarkar Oriental Research Institute, 1952. Pp. 252. Price Rs. 10.

A few years ago Dr. N. J. Shende gave us an excellent survey of the mythology of the Atharva Veda published in the Bulletin of the Deccan College Research Institute, Poona (Vol. IX, 1949). The present volume brings us another haul of valuable material with a wealth of references to the text, for which every research scholar will be grateful. The title, "The Religion and Philosophy of the Atharva Veda", is somewhat misleading and would be altogether inappropriate but for the fact that the religion of the Atharva Veda is indeed essentially magical, and magical spells are extensively used in connection with the subject-matter dealt with in the first seven chapters, viz., Medicine, Erotics, Statecraft, Grihya Rites, Social and Domestic Practices, Witchcraft and Sacrifice.

The last three chapters correspond better to the title of the book and deal with the Brahman in the Atharva Veda, the contribution of the Atharva Veda to the Upanisadic thought, the Atharvanic Upanisads. Chronology is very often a moot point in Indology ; the author assigns the Ramapurvatapaniya Upanisad to the period 200 B. C.—200 A.D. Few students of the development of the Rama cult will find it possible to agree ; the Upanisad in question is definitely later than the 10th century A. D. Anyhow, this is a minor point and does not take away the value of the present study, which is an important addition to the development of Indian civilization and culture.

C. Bulcke

Bharatiya Vidya Bhavan's History and Culture of the People
Vol. II. "The Age of Imperial Unity". *Bombay, 1953.* *Pp. xiii + 733. Maps on 4 pages and plates on XXXVII pages.* Price Rs. 35 nett.

The general planning and nature of this series is like that of the *Cambridge History*. It is highly creditable to offer within the compass of a small volume a comprehensive survey of 1000 years of Ancient India from the 7th century B.C. to 320 A.D. A chapter devoted to *Language and Literature*, generally omitted from such books, proves the width of the Editor's vision.

Without in any way minimizing the importance of political history as skilfully portrayed in this book, we consider that the non-political section on Art, Political Theory and Administrative System, Social and Economic History have increased its interest and value. The brilliant chapters by Dr. Mehendale and Dr. Nihar Ranjan Ray, on Language and Literature and on Art respectively make it possible for us to appreciate the true worth of India's glory.

Dr. Ray has ably traced the developments and variations, in different ages, in the field of Indian architecture, sculpture, painting and other arts. It would have been more interesting if he had linked these up with the changing phases of life and thought in India. His remarks about Mauryan art, that "it was an episode in the history of Indian Art", or that its purpose was "to impress and overawe the populace with the power and majesty of its rulers", specially the last lines, do not fit in with the picture of Asoka, as derived from tradition, literature, and his autobiographical inscriptions.

Practically speaking, political history of this whole period has been almost the monopoly of Dr. R. K. Mukherjee and Dr. D. C. Sarker. The difference in their perspectives leads to differences in their treatment and presentation. Sarker is so engrossed in the discussion of theories, in names, dates and details, that we can never view through this jumble an impressive picture of the whole. Mukherjee's easy-flowing language, with its literary flavour and his art of selection,

carves out in our mind a clear picture of Ancient India. Some chapters by Dr. Sarkar, on the Satavahanas and the Chedis show his deep scholarship.

Dr. Majumdar has at many places proved his bold, yet scientific historical perspective. One such instance may be quoted from his views on the causes of the downfall of the Mauryan Empire. It may be pointed out here that Mr. Munshi has been permitted in the Foreword to express views on this subject which are the opposite of Dr. Majumdar's, and solely based on personal imagination. The history of South India has been given more space than is usually afforded to it and it is certainly an improvement. One need not be apologetic however since North India had the political ascendancy for the larger part of this period and the cultural history of South India is more important than its political history.

In fact, ancient history will have to give greater emphasis on social, economic and cultural aspects. Dr. Majumdar's statements in Chapter XXI, on family life reveal his assets as a true historian who being himself a Hindu is free from the Hindu-bias, and although an Indian, resists the temptation of idealizing the history of its past. Similarly, Dr. Mukherjee also states unequivocally how statements in our *shastras* on ancient Indian education are at many places contradictory.

Appreciating fully its value, it would not be out of place to make a few suggestions. The history of ancient India has so far tended to exaggerate the contributions of the Brahmanical religion, thought etc. to the neglect of the rightful claim of the Buddhistic. Dazzled by the achievement in the first political unification of India, scholars have missed the tragedy of Indian history. It was in the republic, in Buddhism, that there lay the germs of democracy, equality and justice, social, political and religious.

The history of this sub-continent, has to be written on the pattern of the history of Europe. The forces of history and the complete picture of India, as a whole, are to be clearly and precisely delineated.

The Ancient Burial-Mounds of England. By L. V. Grinsell, F.S.A. Second Edition : London, Methuen & Co. Ltd. 1953. Pp. xviii + 278.

Mr. Grinsell, in this book has shown by citing various examples that there is a scanty evidence of mound-burial or cairn-burial before the Neolithic period and even in the Neolithic period the burial was common only among aristocratic families. But as time passed, from Neolithic to the Bronze Age and then to the Iron Age, we see an increase in the number of burial mounds. This indicates that from the ruling families the practice gradually spread to the common people.

The volume under review has been divided into two parts : "The Aspect of Barrow Study" and "Topographical" study. In the first part, the author has tried to give an explanation of whatever he sees in the burial mounds. He not only describes the postures of the dead in the grave but also gives an explanation and theory as to why they were deliberately placed in such postures. He suggests, for example, "The placing of the body in the contracted position has been done in order to assist possible rebirth" (p. 32). Similarly, the boat-shaped hollowed-out trunk coffins, are supposed to have assisted the dead in their journey and the coin placed in the mouth was to pay the ferryman his fee. The situation of the barrows to the west of contemporary living places, the author explains, is probably due to the fact that the land of the dead was considered to be in the west, from the analogy between the passing of life and the setting of the sun. Mr. Grinsell infers from the large number of broken hazel-nuts distributed among the material of long-barrow as an evidence that the workmen ate them as they built the barrows.

While describing the orientation of the long barrows the author says, "An easterly orientation of the 'business' end is a marked tendency of the long-barrows, both chambered and unchambered" (p.13), and while describing the Scilly group of round-barrows he says, "their entrances tend to have an easterly orientation" (p.15). But he has not given any reason for this

easterly orientation. He does not also give an explanation of the double walls that usually occur at the "business-end".

The author has made an extensive, as well as intensive, study of all the burial mounds of England. He does not cite only the common examples but gives the rare ones also in which the interments beside the dead consist of chariot, mirror, palanquin, knife-daggers and glass urns enclosed in lead casket.

Mr. Grinsell has also suggested methods which might help beginners in their work on burial mounds. He has given hints as to what should be their equipments before stepping out for a field-work and has explained in detail the importance of air-photography in field work.

In Part II of the volume, the author has made a topographical study of nineteen regions, and to help the readers to have a full knowledge of the past and the present, the regional chapters begin with a short sketch of the region's archaeological background, and especially the prehistoric contacts which it had with other areas.

It is a very useful piece of work which gives us an insight into the ancient burial mounds of England. The text illustrations and photographic plates and the notes enhance the value of the book.

A. B. Saran

Primitive Man and His Food. By Arnold De Vries. California, Vegetarian News Digest, 2146 Branden Street, Los Angeles 26, 1952. Pp. 151.

In the absence of any book on dietary pattern and nutrition of the primitive people, Arnold De Vries' book will be welcomed as a valuable and timely contribution to anthropological literature.

The book opens with a chapter on comparison of the conditions of health and disease prevalent among the civilized and the primitive. His analysis of the general dietary and medical history of some of the more important primitive races shows that, while the civilized live in a world pathology, the degenerative diseases are rare and some of them completely unknown among primitive peoples. In the following

ten chapters he collects ethnographic materials from various tribes regarding their food and health and tries to correlate health with nutrition. In the concluding chapter, he sums up the value of primitive food in terms of proteins, carbohydrates, fats, minerals and vitamins. He is of opinion that "a natural food, uncooked and unrefined, grown in fertile soil and consumed in its fresh state contains maximum amount of the chemical elements needed by the human body". The book ends with a table which shows how many multiples of the respective elements are found in primitive diets as contrasted with modern diets.

The writer does not however make any reference to the actual amount of the food-groups which are consumed in a particular tribe, nor does he study comparative values of the food-stuffs. This is due to the fact that relevant data are practically absent in current ethnographic literature. The author has however to be congratulated because he has with painstaking care, brought together the available material on the subject.

L. P. Vidyarthi

Sociology and Philosophy. By Emile Durkheim. Translated by D. F. Pocock, with an Introduction by J. G. Peristiany. Paris, Presses Universitaires de France, 1951, and London, Cohen & West Ltd., 1953. Pp 80 excluding Introduction xxxii ; translator's note and preface viii, etc. Price 10s. 6d. net.

The translator deserves our congratulation for not only bringing to the access of English readers the works of Durkheim collected in *Sociologie et Philosophie* (1924), but also for showing his "competence and faithfulness" in translating the abstract ideas of Durkheim in such simple and lucid English. In three essays of Durkheim, (1) Individual and Collective Representations, (2) The Determination of Moral Facts, (3) Value Judgments and Judgments of Reality, collected in this book, we find a mature exposition of his most basic methodological postulate and that is, "Social facts are things". In these essays, we are presented with a penetrating

exposition of Durkheim's conception regarding "social mind" and "collective representation", his ethical and moral orientation and lastly his "value judgment" and concept of collective ideas.

In the first essay, he lays stress upon the fact that collective consciousness differs from individual consciousness, and thus makes a case for sociological explanation of social facts instead of a psychological one. He further criticizes Huxley, Maudsley and James for reducing consciousness to the level of epiphenomenon of the organism (physical life) and concludes that the formation of mental images is to some extent dependent on the structure, not only of the nervous system but of the mind (social). He lastly expresses the opinion, "images combine to form ideas and ideas become part of complex system of concepts."

In the next paper, Durkheim examines "moral facts" from different points of view. He is of the opinion that morality begins with the membership of a group ; it is a social reality and hence should be considered in the context of society. He considers society as a moral power and terms it as "moral authority" which "surpasses us physically, materially and morally".

In his concluding essay, Durkheim puts forward his thesis on value-system and assesses its importance in relation to social facts in the following words, "the core of social system, its very soul, is the system of ideas of value to which is related a social hierarchy of values". Further, in the same way as we distinguish in Durkheimian sociology between the sacred and the profane, a methodological distinction is drawn between a judgement of value and a judgement of reality.

In addition to these brilliant essays the Discussion and Replies to Objection made by Durkheim, especially relating to the last essays, throw further light on his view-point. J. P. Peristiany's short but sound appraisal of Durkheimian sociology constitutes another important feature of the book.

Charles Darwin and His Problems. By Evelyn Cheesman. London, G. Bell and Sons, Ltd., 1953. Pp. 156. Price 9s.6d. net.

This book is a well-written biography of Sir Charles Darwin by Evelyn Cheesman, the former curator of insects at the London zoo.

It is divided into nine chapters which deal with three phases of Darwin's life. In the first phase, we see him as a child and as a student of Cambridge University. The second phase was his scientific survey for four years and nine months' voyage on board the *Beagle* that sailed round the coast of South America, New Zealand and Australia. The last phase was his persistent work for more than twenty years in the organization and systematization of his thoughts about the origin of species.

A. B. Saran

Fossil Men : Elements of Human Paleontology. By M. Boule & H. V. Vallois. Paris, Masson et Cie, Editeurs, 120 Boulevard Saint-Germain, 1952. Price, 3.65 Fr.

This is the fourth edition of the classic of human paleontology. It adds important changes and numerous modifications to the 3rd edition which appeared in 1946.

As soon as the war over, the study of human palaeontology was taken up again with the same earnestness as before. Important discoveries have been made while the elaboration of materials gathered many years previously, revealed new facts. The balance-sheet of all that this science has been able to put to its credit during the short period between this and the previous edition is considerable : the undoubted authenticity of human remains in the soil of Villafranca which date from the Early Quaternary, and which many authors still assert to belong to the Tertiary ; bringing up to date of new chronological methods to solve long discussed problems, as for example, the enigma of Piltdown ; a more perfect knowledge of the ancient industries of Asia and Africa, and finally, the discovery in America of fossil man which had been searched for in vain for over a century, etc.

Among all these new data, two seem to be of capital importance for the modifications they have brought about in the ideas on the development of humanity : they were, first of all, new finds of Australopithecini in South Africa ; and secondly, the discovery in France of the Fontchevade men which have furnished the first sure proof of the existence, anteriorly to that of Neandertal man, of a human form more closely related to him than the *Homo sapiens* of the succeeding epochs.

These new facts have caused the author to retouch his work on some important details : the chronology of prehistoric men has been modified and the inferior limit of the Quaternary has been pushed back further into the past.

The chapter on primate fossils has been increased considerably and mention is made of the Austrolopithecini in harmony with their extreme importance ; these are now occupying a place intermediate between the anthropoids and man, given formerly to the prehominians.

To bring up-to-date does not merely mean the inclusion of some additions. It must put aside facts, the interest of which is no longer evident, suppress theories no longer up-to-date. Many modifications have been made with this end in view. The new edition thus differs notably from the previous one and is still further removed from the first volume published by M. Boule, which, at its first appearance, had been hailed as a most striking success. But the framework of the book has remained the same and the leading ideas have not been changed.